2002

MITSUBISHI ELECTRIC

Service Manual

DVD Player

Model
DD-8020

CAUTION

Before servicing this chassis, it is important that the service person reads all SAFETY PRECAUTIONS and the SAFETY NOTICE in this manual.

SPECIFICATIONS

Power Supply:	120V AC, 60 Hz
Power Consumption:	17W
Weight:	6.6 lb.
External Dimensions:	17"x 3-3/8"x12-1/8" (W/H/D)
Signal System:	Standard NTSC
Laser:	Semiconductor laser, wavelength 650nm/780nm
Frequency Range:	(Digital Audio)
DVD Linear -	
48 kHZ Sampling:	4 Hz to 22 kHz
96 kHZ Sampling:	4 Hz to 44 kHz
Signal-To-Noise Ratio:	More than 112 dB (EIAJ)
Audio Dynamic Range:	More than 108 dB (EIAJ)
Harmonic Distortion:	Less than 0.002%
Wow and flutter:	Below measurable level (less than ± 0.001% (W.PEAK)) (EIAJ)
Operating conditions:	Temperature: 5°C to 35°C
Operation status:	Horizontal
Video output:	1.0 V (p-p), 75Ω, negative sync., pin jack x 1
S Video output:	(Y) 1.0 V (p-p), 75Ω, negative sync., Mini DIN 4-pin x 1
	(C) 0.286 V (p-p), 75Ω
Color Difference outputs:	(Y) 1.0 V (p-p), 75Ω,
(1 Interlaced)	negative sync., pin jack x 1
(1 Progressive)	(Cr, Pr)/(Cb, Pb) 0.7 V (p-p), 75Ω, pin jack x 2
Digital Audio output:	(Bitstream/PCM) 0.5 V (p-p), 75Ω, pin jack x 1, Optical connector x 1
Analog Audio output:	2.0 V (rms), 220Ω, pin jack 2 CH L R x 2, 5.1 CH SURROUND x 6

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
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SAFETY NOTICE

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 Ω per volt or more sensitivity.

Connect a 1500 Ω 10 W resistor, paralleled by a 0.15 μF 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

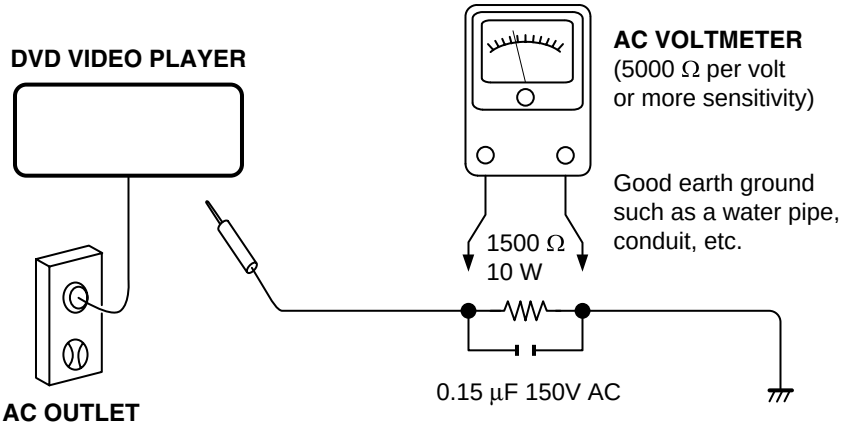
Measure the AC voltage across the 1500 Ω resistor.

The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 V. A reading exceeding 0.3 V indicates that a dangerous potential exists, the fault must be located and corrected.

Repeat the above test with the DVD VIDEO PLAYER power plug reversed.

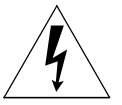
NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.

READING SHOULD NOT EXCEED 0.3V



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check

SAFETY NOTICE



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

LASER BEAM CAUTION LABEL

CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.
ATTENTION
RAYONNEMENT VISIBLE ET INVISIBLE LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU, NI À L'O EIL NU NI À L'AIDE D'INSTRUNENTS D'OPTIQUE.
VORSICHT
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT IN DEN STRAHL BLICKEN AUCH NICHT MIT OPTISCHEN INSTRUMENTEN.
注 意 ここを開くと可視レーザー光及び不可視レーザー光がでます。ビームを直接見たり触れたりしないこと。光学機器で直接ビームを見ないこと。
ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.
ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STARÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTR.
VARO!
AVATTAESSA OLET ALTTINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEIL YLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.
VARNING
SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.
98764189

When the power supply is turned on, you may not remove this laser caution label. If it is removed, laser radiation may be recceived.

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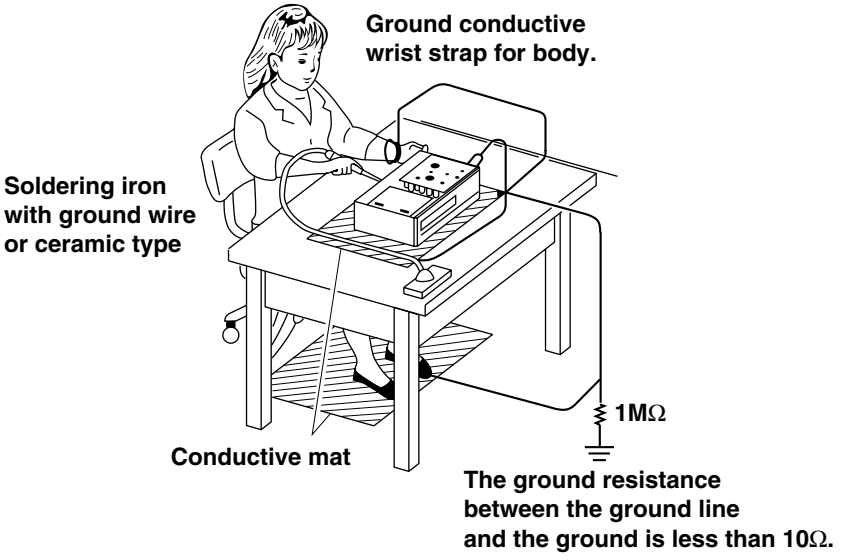
SECTION 1
GENERAL DESCRIPTIONS

1. PREPARATION FOR SERVICING

The Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it may operate properly after replacement, if subjected to electrostatic discharge during replacement, its life might be shortened. When replacing the laser diode, LSI's and IC's, use a conductive mat, soldering iron with ground wire, etc. to protect against damage from static electricity.



2. LOCATION OF MAIN PARTS AND MECHANISM PARTS

2-1. Location of Main Parts

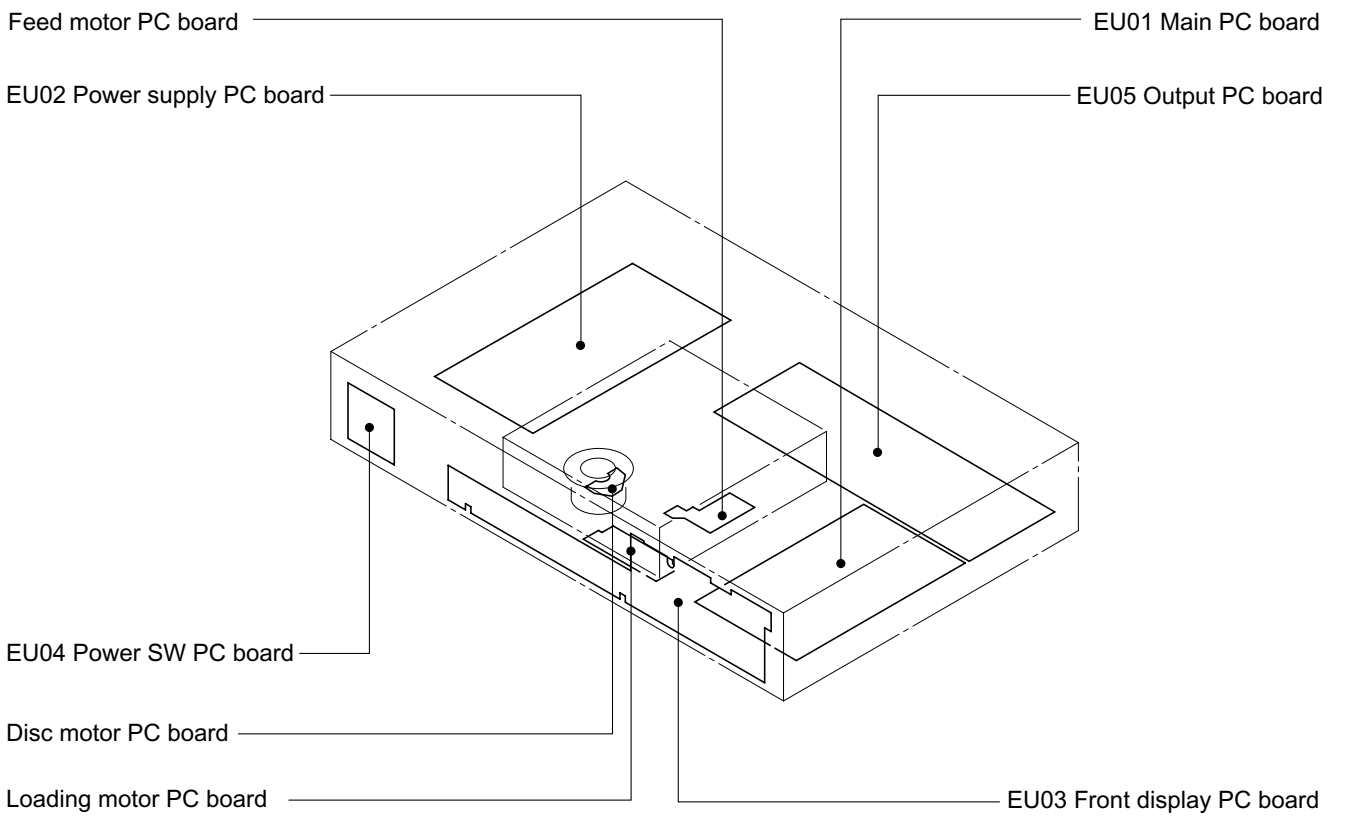

Feed motor PC board
EU01 Main PC board
EU02 Power supply PC board
EU05 Output PC board
EU04 Power SW PC board
Disc motor PC board
Loading motor PC board
EU03 Front display PC board

Fig. 1-2-1

2-2. Location of Mechanism Parts

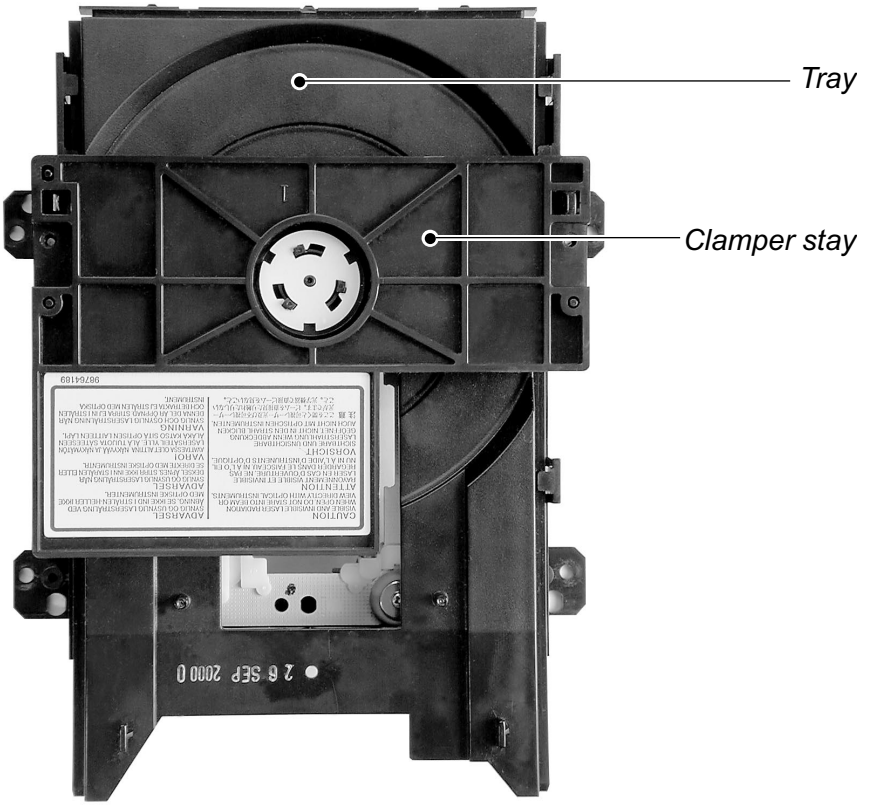


Fig. 1-2-2 Mechanism chassis assembly (Top side)

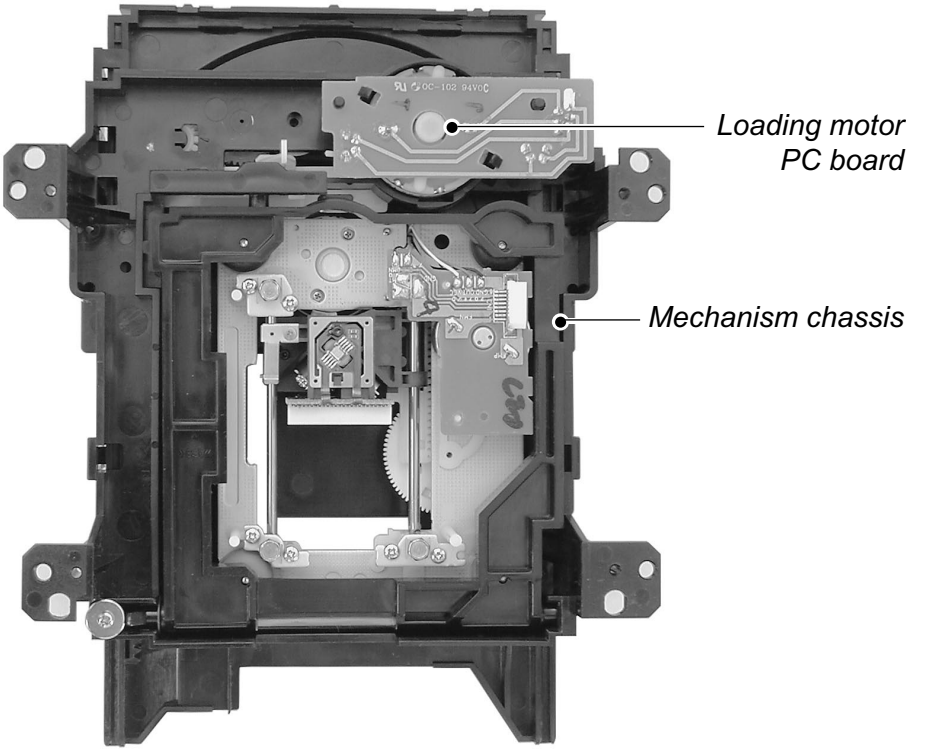


Fig. 1-2-3 Mechanism chassis assembly (Bottom side)

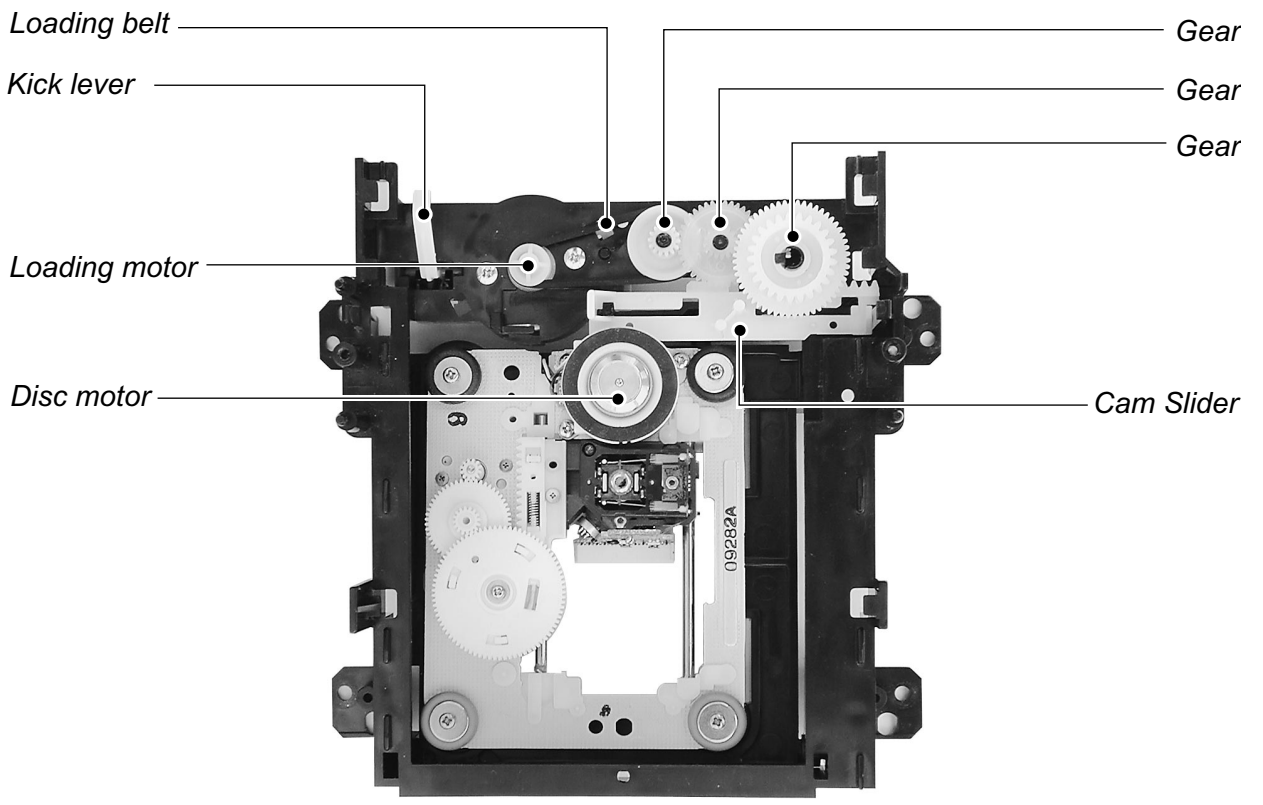


Fig. 1-2-4 Mechanism chassis assembly (Internal side)

<Type A>

Note:

When servicing, note that this model has two types of pickup mechanism assembly.

Type A is a service part. Type B can be replaced with a Type A pickup.

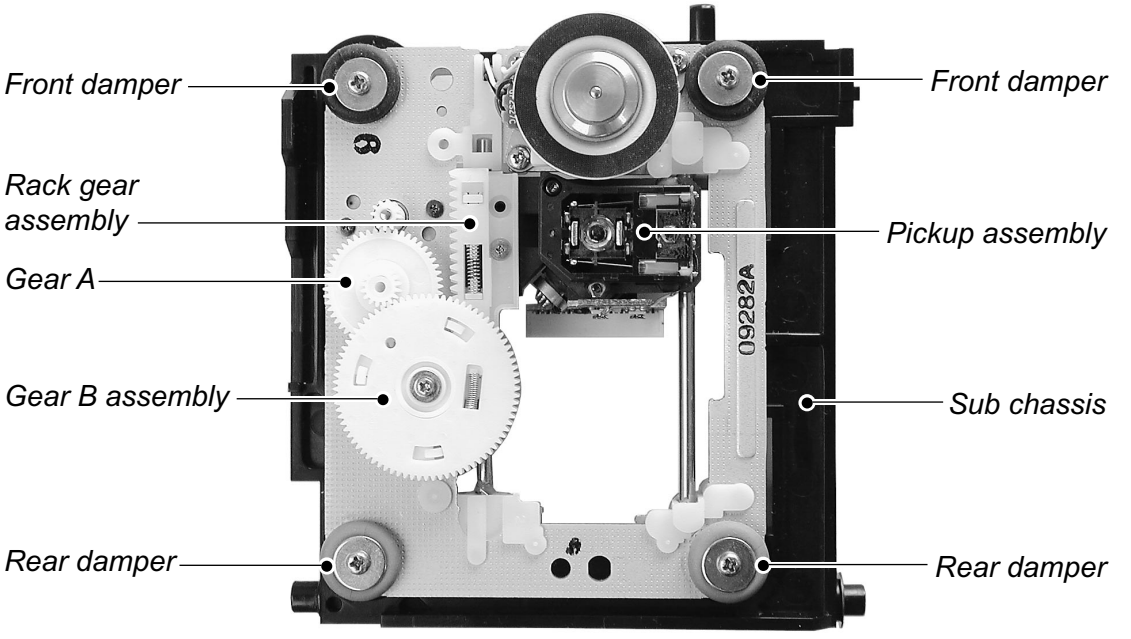


Fig. 1-2-5 Pickup mechanism chassis assembly (Top side)

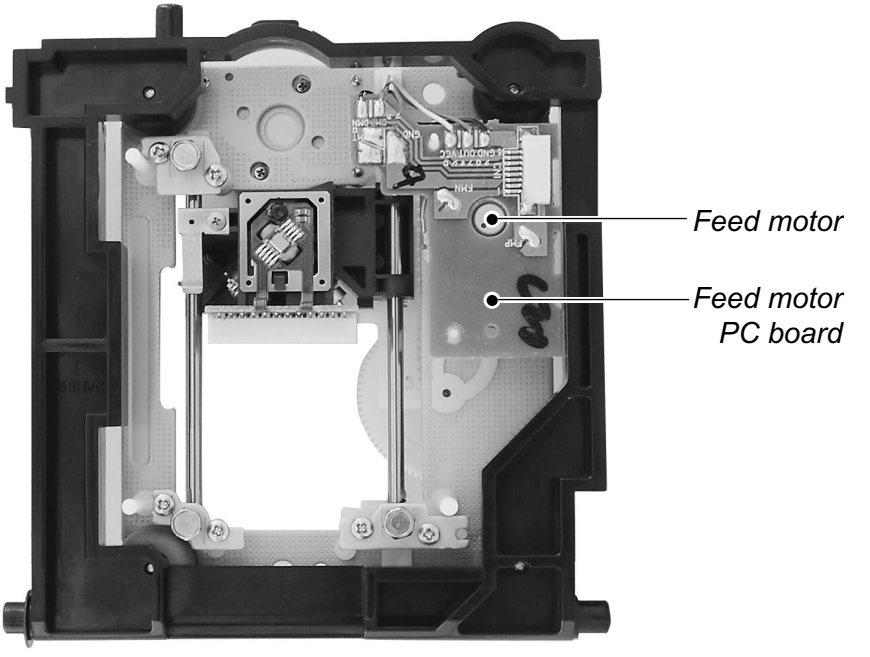


Fig. 1-2-6 Pickup mechanism chassis assembly (Bottom side)

<Type B>

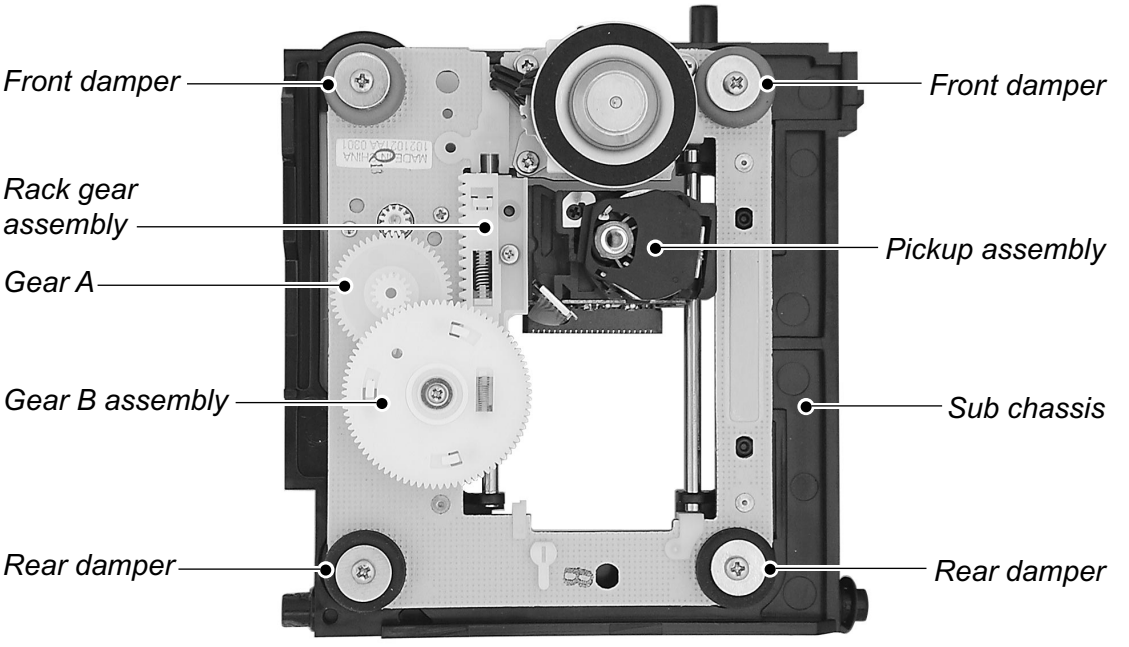


Fig. 1-2-7 Pickup mechanism chassis assembly (Top side)

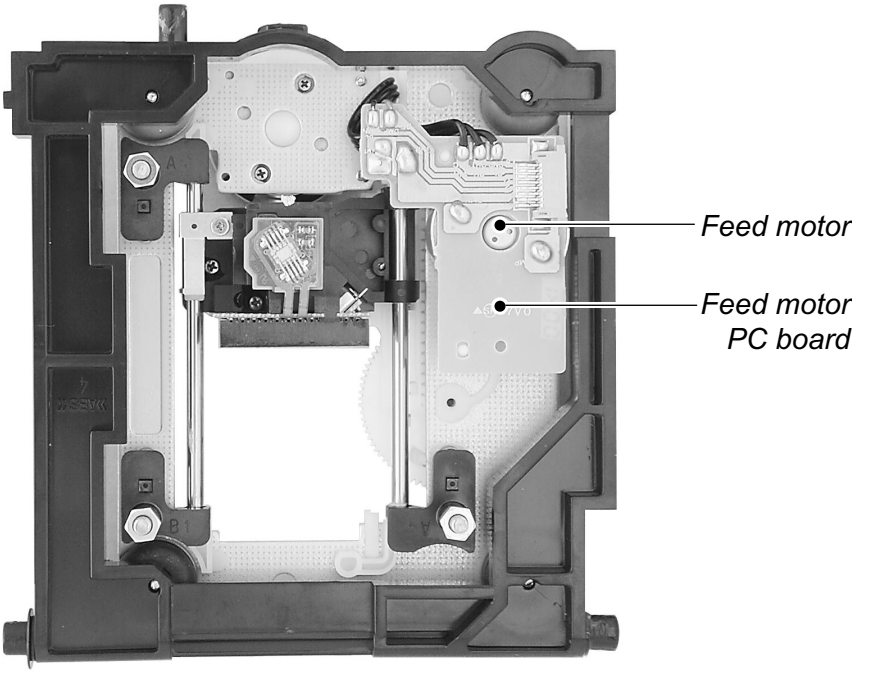


Fig. 1-2-8 Pickup mechanism chassis assembly (Bottom side)

3. TROUBLESHOOTING

3-1. Main Circuit

3-1-1. Servo System

(1) Initial Operation after Power ON

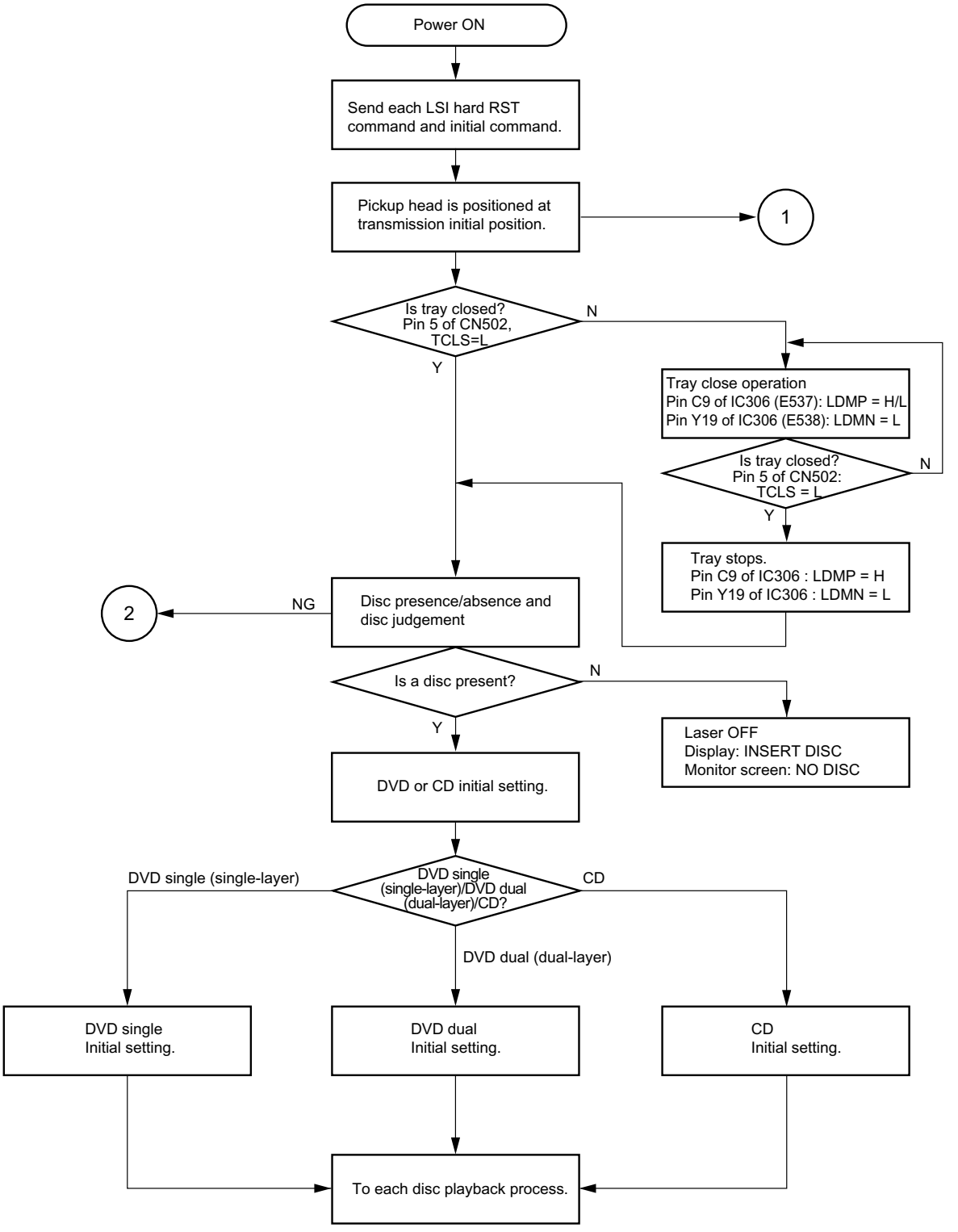


Fig. 1-3-1

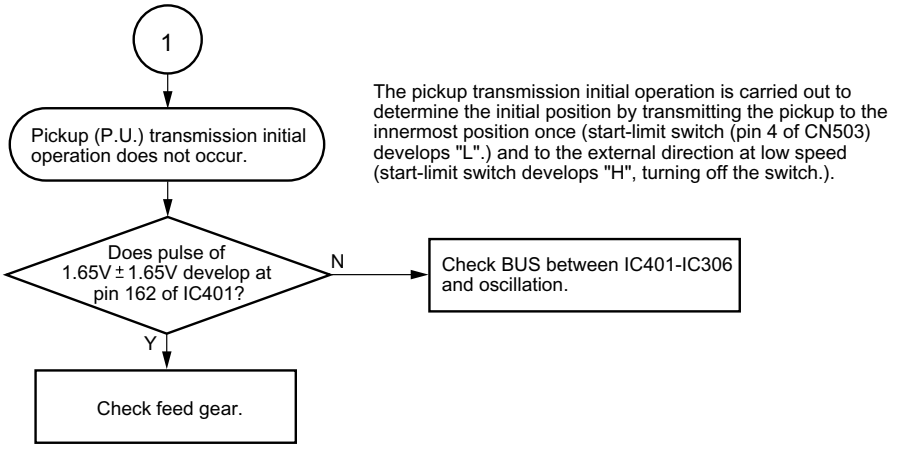

1
Pickup (P.U.) transmission initial operation does not occur.
Does pulse of 1.65V ± 1.65V develop at pin 162 of IC401?
N
Check BUS between IC401-IC306 and oscillation.
Y
Check feed gear.
The pickup transmission initial operation is carried out to determine the initial position by transmitting the pickup to the innermost position once (start-limit switch (pin 4 of CN503) develops "L".) and to the external direction at low speed (start-limit switch develops "H", turning off the switch.).

Fig. 1-3-2

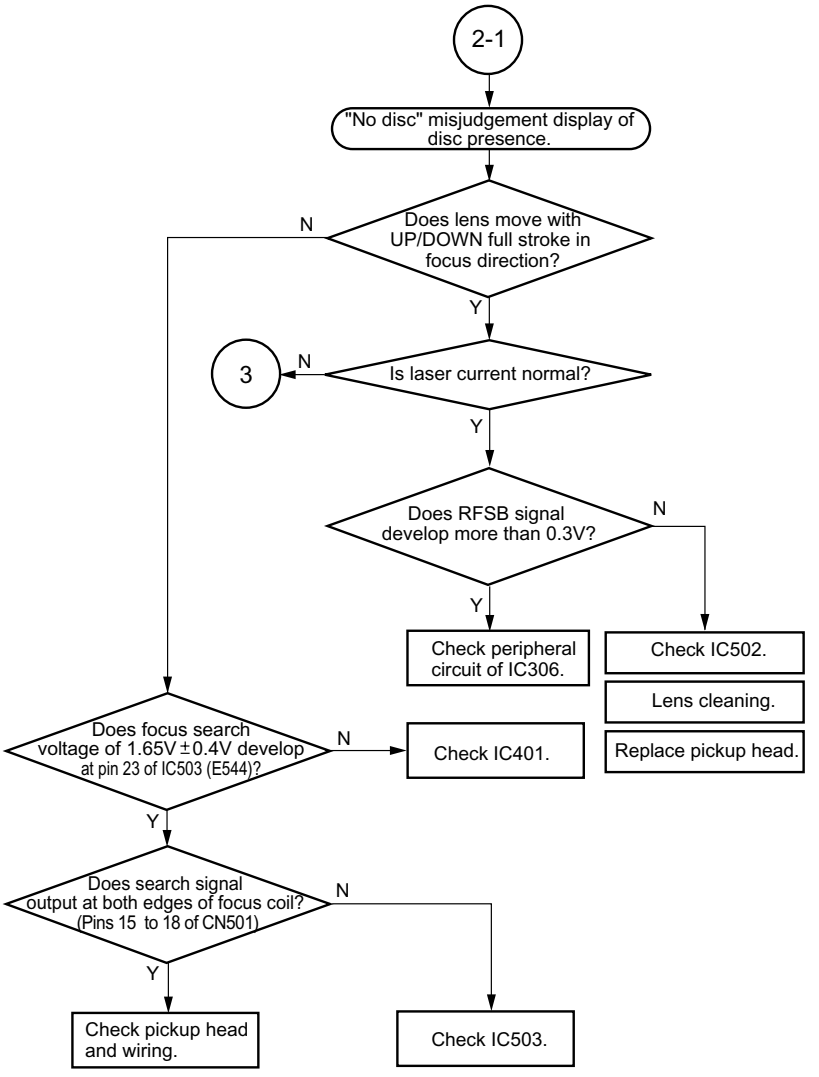


Fig. 1-3-3

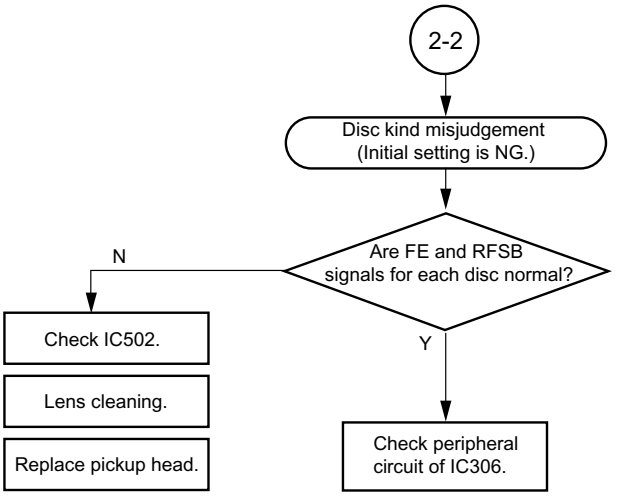
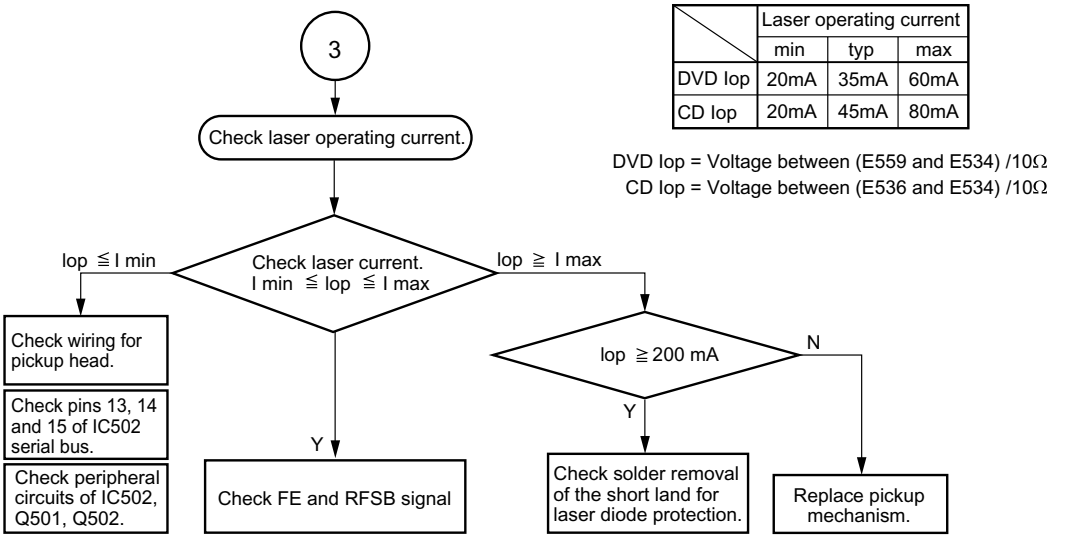


Fig. 1-3-4



	Laser operating current		
	min	typ	max
DVD Iop	20mA	35mA	60mA
CD Iop	20mA	45mA	80mA

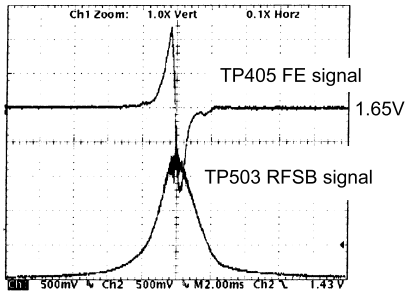
DVD Iop = Voltage between (E559 and E534) /10Ω
CD Iop = Voltage between (E536 and E534) /10Ω

To turn on each laser diode forcibly, press the following buttons on the remote controller.
DVD LD: ZOOM, 0, 3, 0, ZOOM
CD LD: ZOOM, 0, 3, 1, ZOOM
After checked the laser current, press POWER or OPEN/CLOSE button to turn it off.

CAUTION
- The laser ray emitting out from the pickup head is very harmful to your eyes.
  Keep your eyes from the objective lens at least 300mm distance during the pickup head operating.
- When you perform solder removal work, please turn OFF a set power supply and perform the ground of human body and a tool.

Fig. 1-3-5

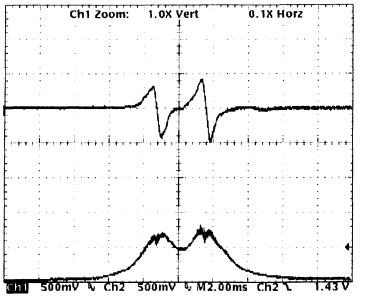
DVD single (single-layer) disc detection waveform



V : 500 mV/div
H : 2 ms/div

Fig. 1-3-6

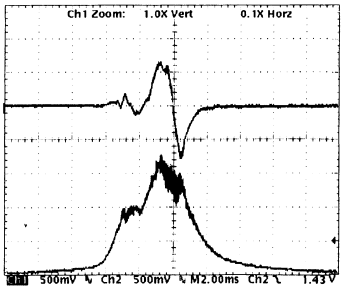
DVD dual (dual-layer) disc detection waveform



V : 500 mV/div
H : 2 ms/div

Fig. 1-3-7

CD disc detection waveform



V : 500 mV/div
H : 2 ms/div

Fig. 1-3-8

(2) Picture appears (PLAY)

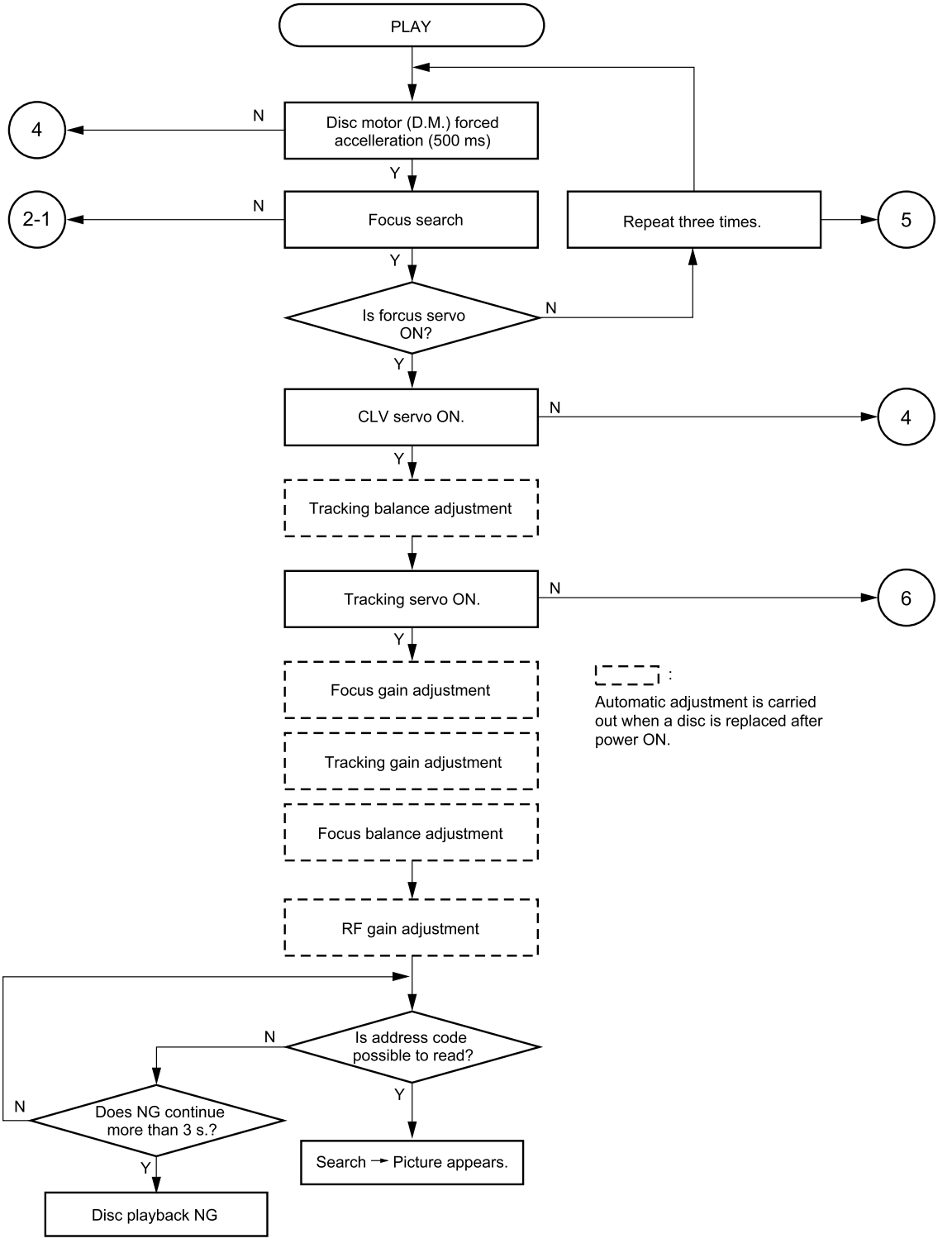


Fig. 1-3-9

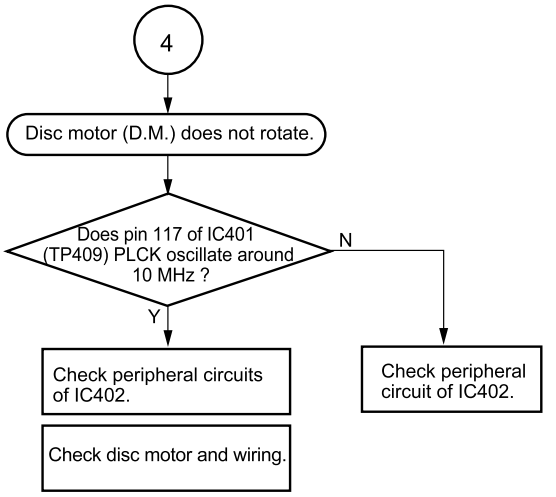

4
Disc motor (D.M.) does not rotate.
Does pin 117 of IC401 (TP409) PLCK oscillate around 10 MHz ?
N
Y
Check peripheral circuits of IC402.
Check peripheral circuit of IC402.
Check disc motor and wiring.

Fig. 1-3-10

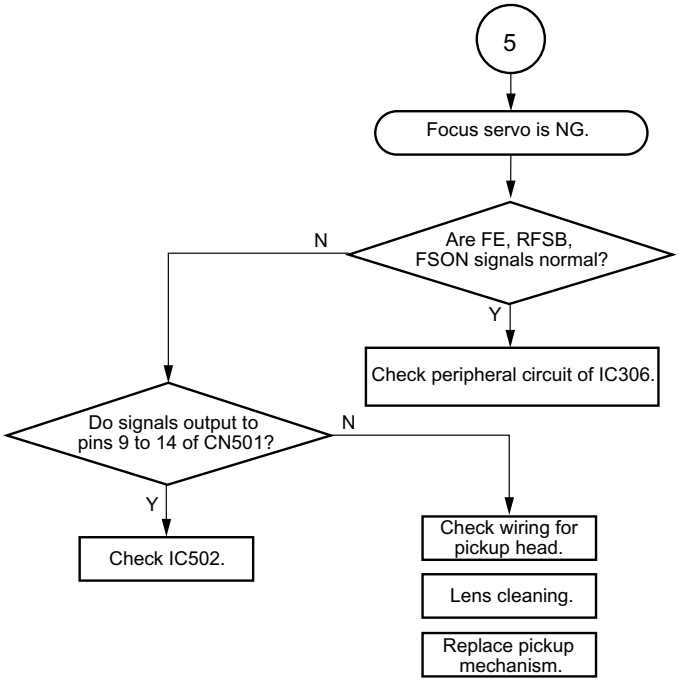


Fig. 1-3-11

Focus servo ON signal waveform

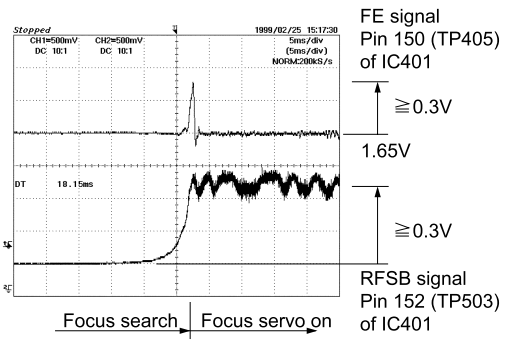


Fig. 1-3-12

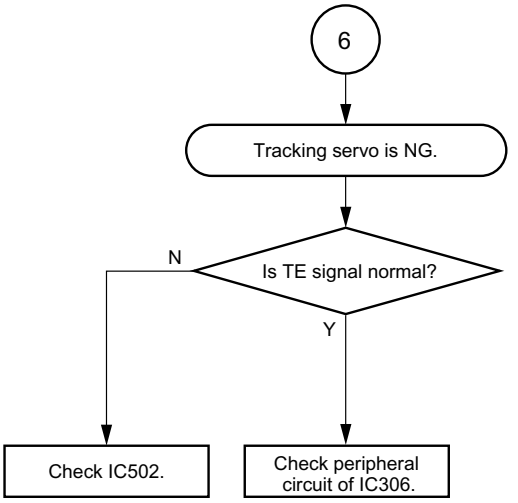
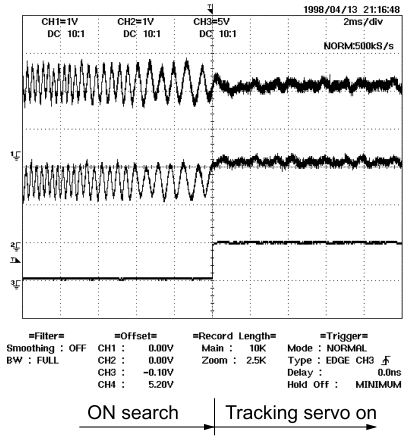


Fig. 1-3-13

Signal waveform at tracking servo ON (CD)


1998/04/13 21:16:48
CH1=1V DC 10:1
CH2=1V DC 10:1
CH3=5V DC 10:1
2ms/div
NORM:500kS/s
=Filter= Smoothing : OFF BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : -0.10V CH4 : 5.20V
=Record Length= Main : 10K Zoom : 2.5K
=Trigger= Mode : NORMAL Type : EDGE CH3 Delay : 0.0ns Hold Off : MINIMUM
ON search
Tracking servo on

TE signal
Pin 151 (TP406) of IC401
1.65V

RFRP signal
Pin 153 (TP408) of IC401

Search ON (SRCH)
Pin 38 (TP411) of IC401

Fig. 1-3-14

Signal waveform at tracking servo ON (DVD)

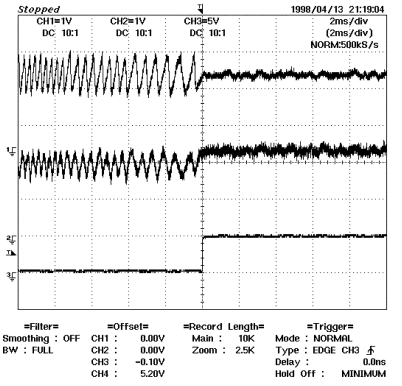

Stopped
1998/04/13 21:19:04
CH1=1V DC 10:1
CH2=1V DC 10:1
CH3=5V DC 10:1
2ms/div
(2ms/div)
NORM:500kS/s
=Filter= Smoothing : OFF BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : -0.10V CH4 : 5.20V
=Record Length= Main : 10K Zoom : 2.5K
=Trigger= Mode : NORMAL Type : EDGE CH3 Delay : 0.0ns Hold Off : MINIMUM

Fig. 1-3-15

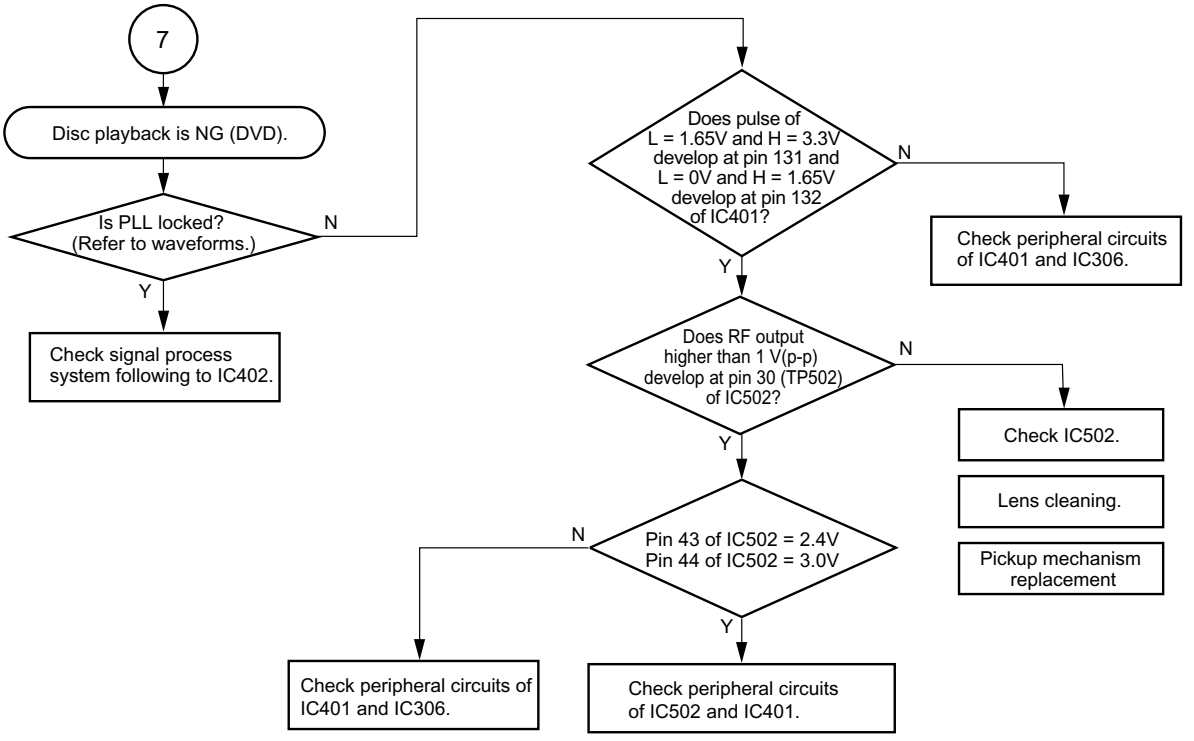
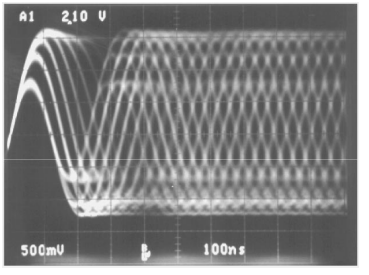


Fig. 1-3-16

PLL works as a servo loop to generate a clock signal for reading RF signal binary data. With the PLL locked, the eye pattern is identified clearly when triggered with the read clock PLCK.

DVD RF signal

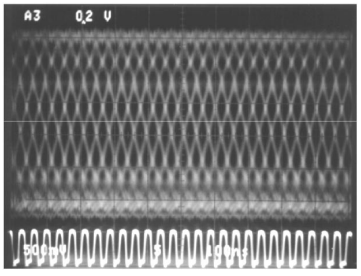


DVD RF signal
Pin 30 (TP502) of IC502

V : 500 mV/div
H : 50 ns/div

Fig. 1-3-17

DVD playback waveform



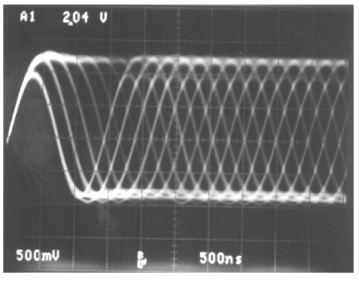
DVD RF signal
Pin 30 (TP502) of IC502

DVD PLCK
Pin 117 (TP409) of IC401

CH1 : TP502 DVDRF 500 mV/div
CH2 : TP409 DVDPLCK 5 V/div
50 ns/div

Fig. 1-3-19

CD RF signal

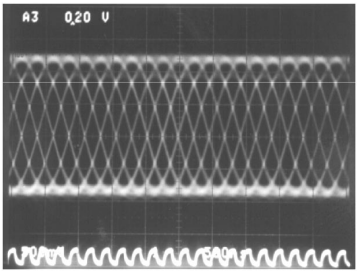


CD RF signal
Pin 30 (TP502) of IC502

V : 500 mV/div
H : 100 ns/div

Fig. 1-3-18

CD playback waveform



CD RF signal
Pin 30 (TP502) of IC502

CD PLCK
Pin 117 (TP409) of IC401

CH1 : TP502 CDRF 500 mV/div
CH2 : TP409 CDPLCK 5 V/div
100 ns/div

Fig. 1-3-20

3-1-2. Location Diagram of Servo Test Point

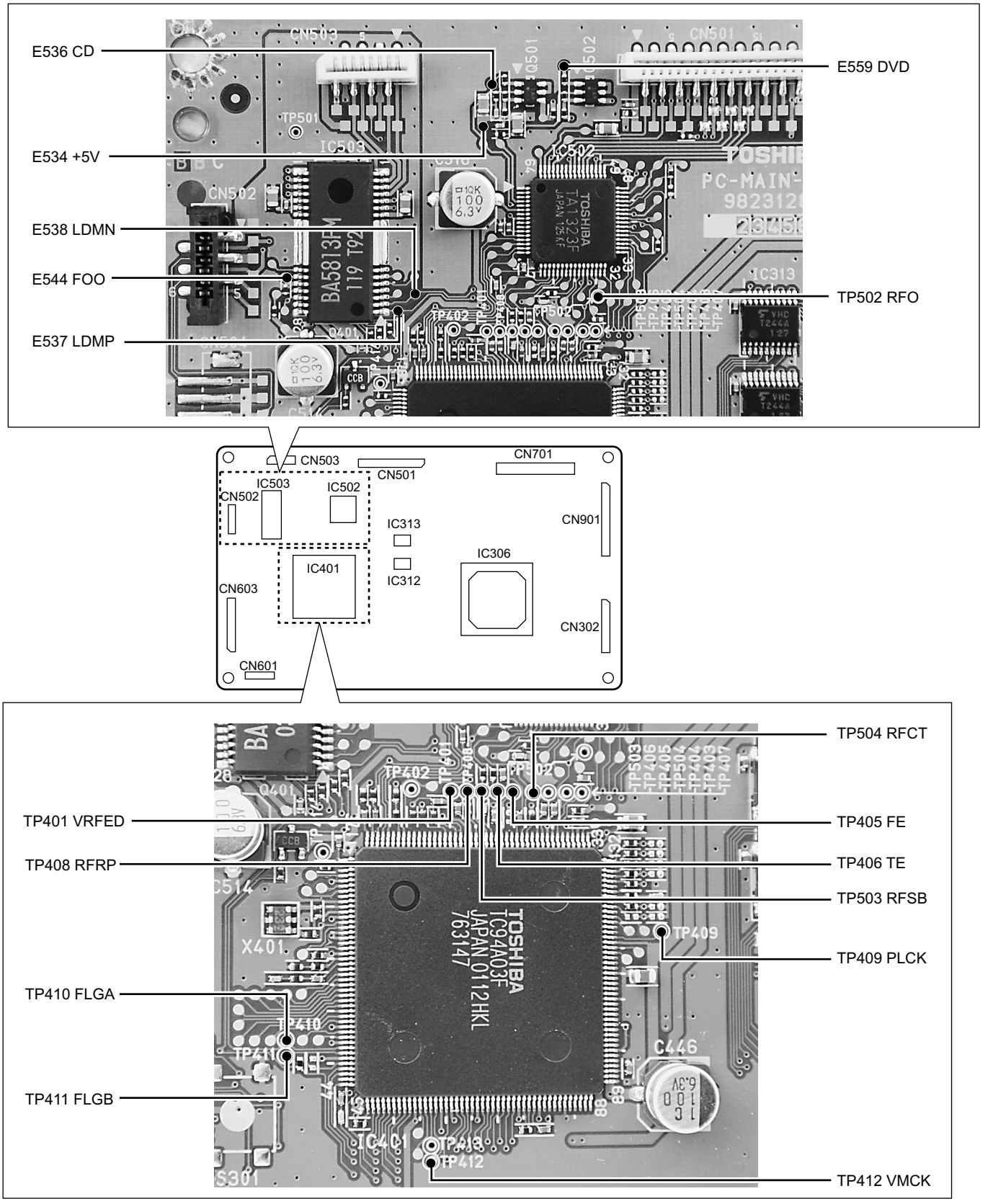


Fig. 1-3-21

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING SERVICING

Electronic parts are susceptible to static electricity and may easily damaged, so do not forget to take a proper grounding treatment as required.

Many screws are used inside the unit. To prevent missing, dropping, etc. of the screws, always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

1. Remove five screws (1) and remove the top cover (2).

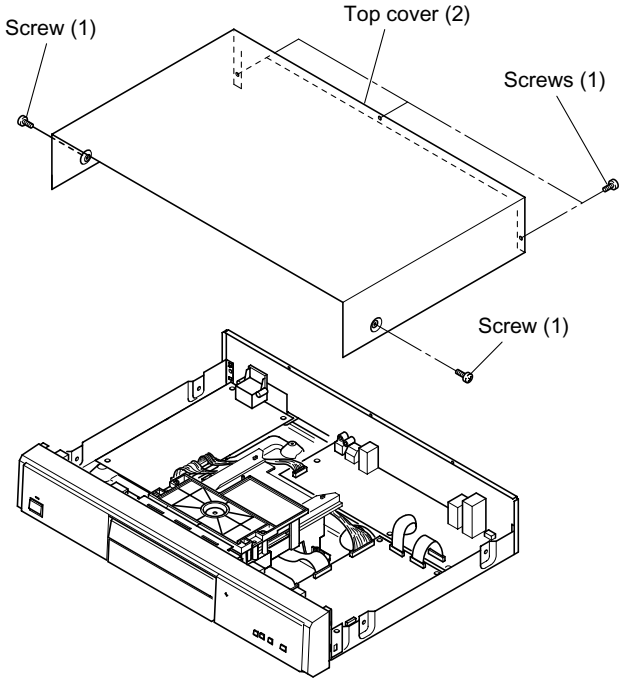


Fig. 2-1-1

1-1-2. Clamper Stay

<Removal>

1. Remove two screws (1).
2. Release two claws and remove the clamper stay (2).

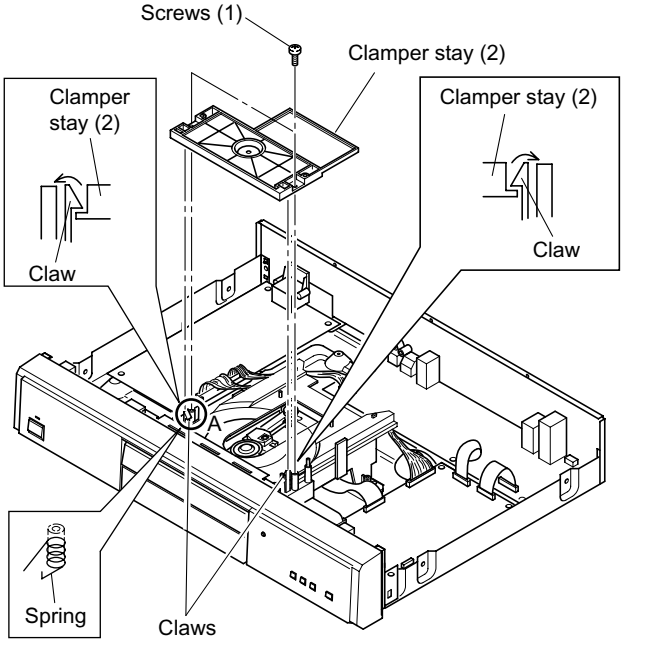


Fig. 2-1-2

<Mounting >

1. The spring for tray side pressure is inserted into the portion “A”. (Refer to Fig. 2-1-2.)
2. By referring to Fig. 2-1-3, insert the spring normally and mount the clamper stay.

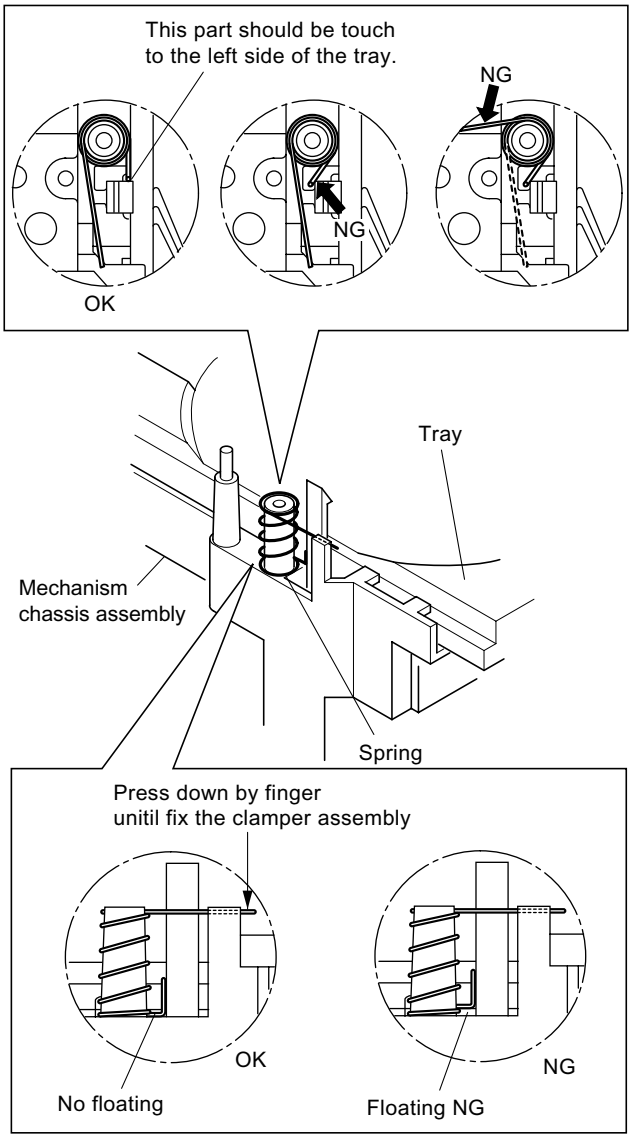


Fig. 2-1-3

1-1-3. Tray Panel

<Tray Ejection>

1. Slide the slider (2) of the mechanism chassis assembly (1) with a screwdriver, etc. in the arrow direction, so that the tray (3) is ejected.

Note:

- Take care not to damage the pickup and other parts.

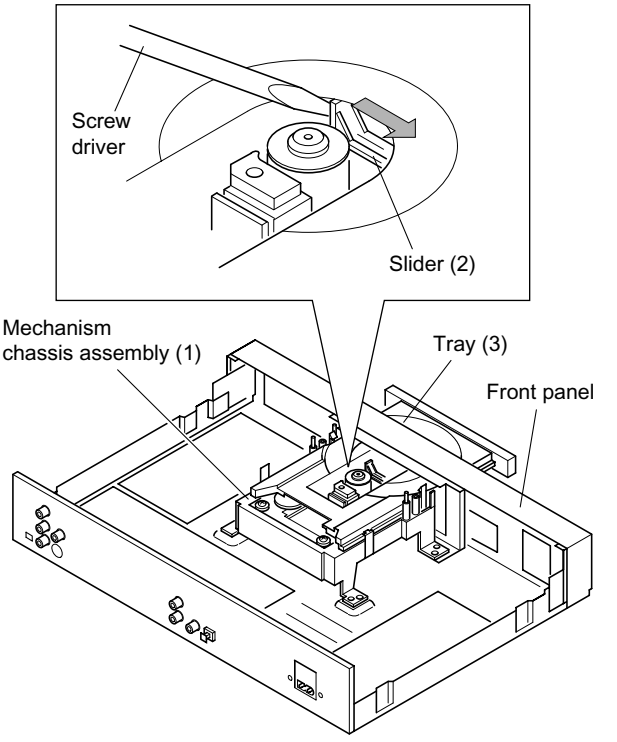


Fig. 2-1-4

<Tray Panel Removal>

1. Eject the tray (3).
2. Twist the tray panel (4) a little in the arrow A direction with the tray (3) hold by hand to release two claws and lift up the tray panel (4) in the arrow B direction, then the tray panel (4) is removed.
   (Refer to Fig. 2-1-5.)
3. When mounting the tray panel (4), insert the tray panel (4) along the grooves of the both sides of the tray (3) until clicking.

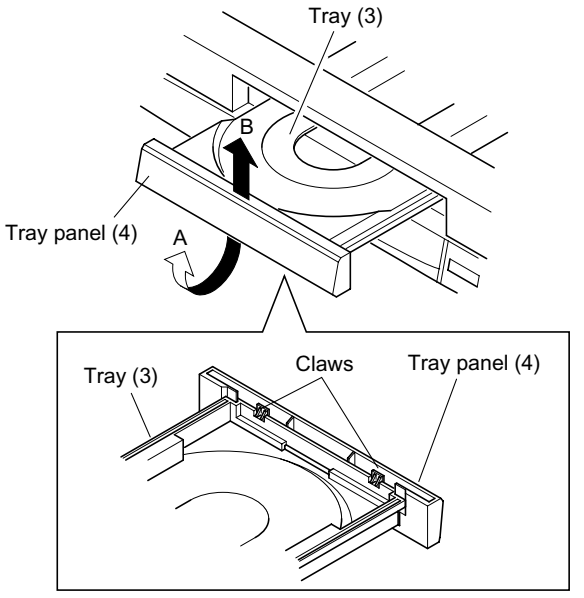


Fig. 2-1-5

1-1-4. Front Panel and Tray

1. Remove the flexible cable (1).
2. Remove one screw (2) and remove the GND lead (5).
3. Release four claws and remove the front panel (4).
4. Pull out the tray (3) to this side.

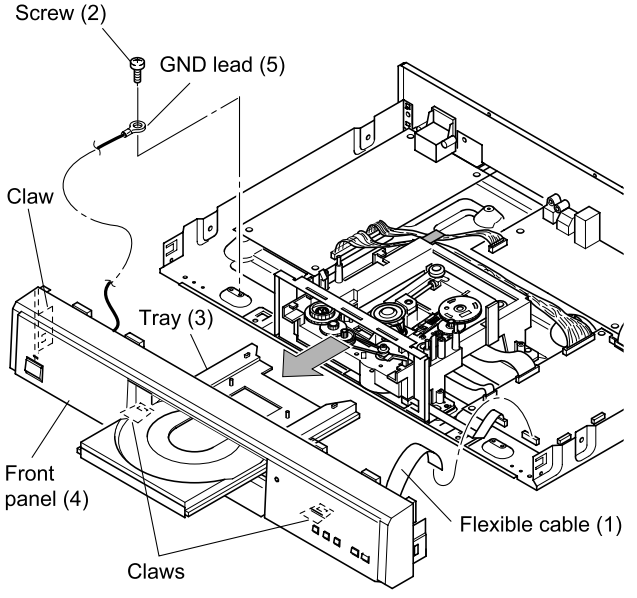


Fig. 2-1-6

Note:

- Insert the tray (3) with the front side of the pickup mechanism assembly descended. (The slider positions to the left side.)
- The gears are required to match their phases each other. After setting the gear (4) as shown in the figure "A", insert the tray (3). When inserting a tray (3), push the rack gear side shown by the arrow.
- Confirm that the mark of the gear matches with the triangle mark on the reverse side of the tray in the tray close status. (The gear is rotated with the slider locks.) (Refer to Fig. B.)

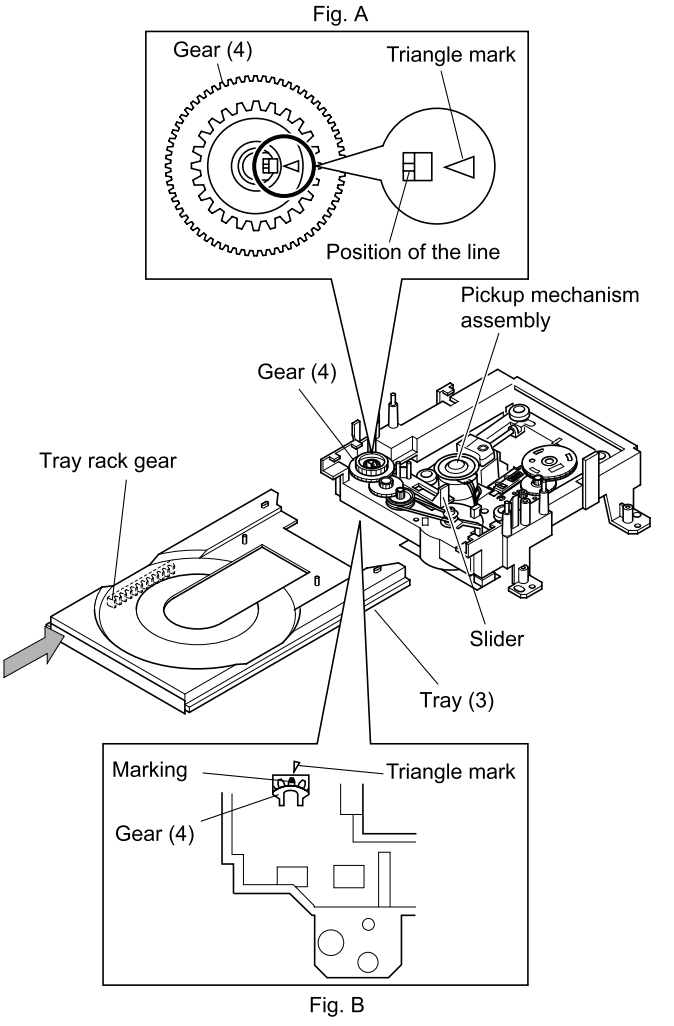


Fig. 2-1-7

1-1-5. Rear Panel

1. Remove eight screws (1) and remove the rear panel (2).

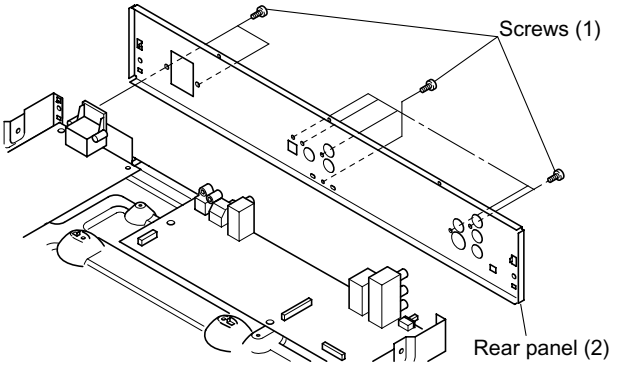


Fig. 2-1-8

1-2. PC Board Replacement

1-2-1. Main PC Board

Note:

- Before removing the main PC board (4), be sure to short-circuit the laser diode output land.

  After replacing, open the land as it was after inserting the flexible cables (1).

1. Remove the top cover. (Refer to item 1-1-1.)
2. Remove six flexible cables (1) and remove one connector (2).
3. Remove four screws (3).
4. Remove the main PC board (4).

Note:

- When mounting, be sure to twist the wire for the connector (2) several times.

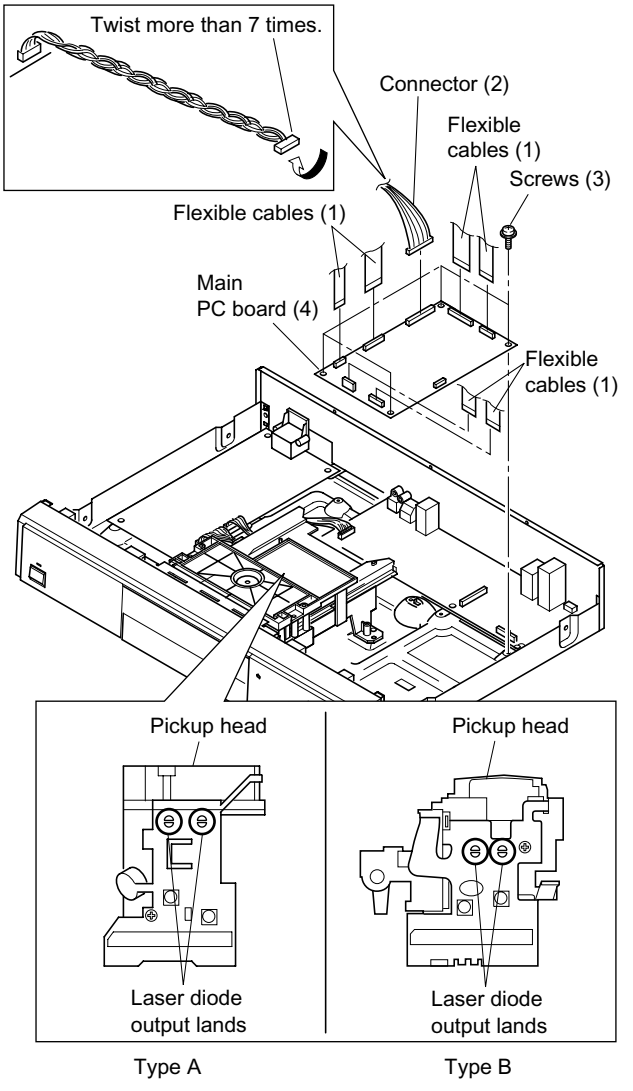


Fig. 2-1-9

1-2-2. Output PC board

1. Peel off the tape (1).
2. Remove the connector (2).
3. Disconnect two flexible cables (3).
4. Remove three screws (4).
5. Remove five screws (5) and remove the output PC board (6).

Note:

- When mounting, be sure to twist the wire for the connectors (2) several times.

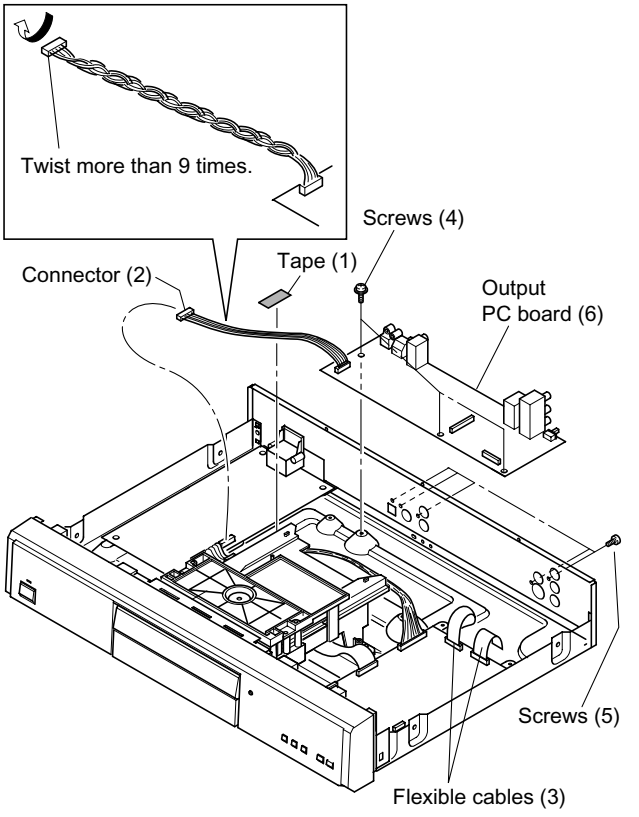


Fig. 2-1-10

1-2-3. Power Supply PC Board

1. Peel off the tape (1).
2. Remove the connectors (2) and (3).
3. Remove three screws (4).
4. Remove two screws (5).
5. Remove the power supply PC board (6).

Note:

- When mounting, be sure to twist the wire for the connectors (2) and (3) several times.

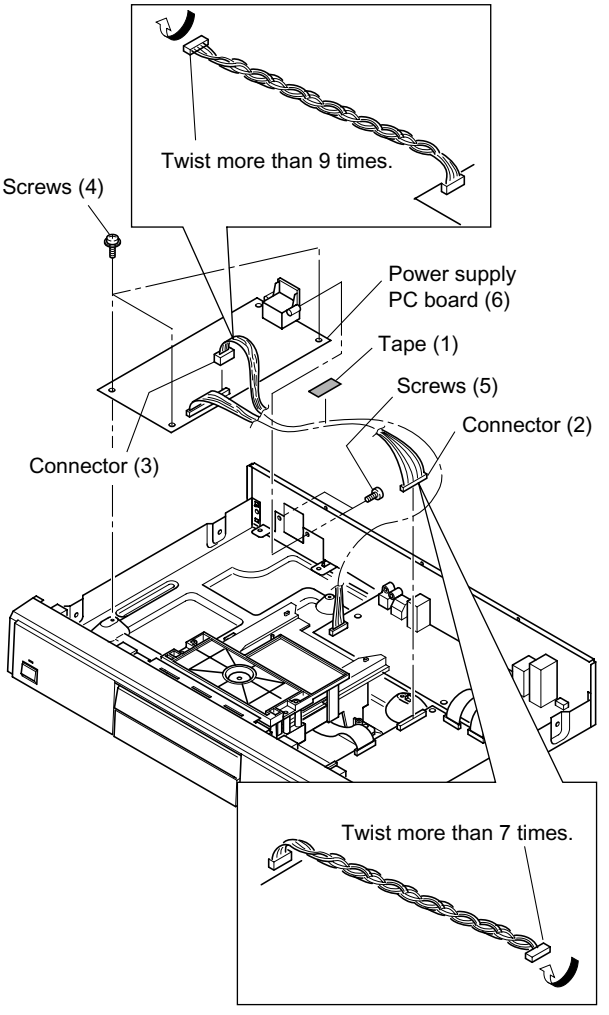


Fig. 2-1-11

1-2-4. Front PC Board

1. Remove the front panel. (Refer to item 1-1-4.)
2. Remove one flexible cable (1).
3. Remove six screws (2) and remove the front display PC board (3).
4. Remove two screws (4) and remove the power switch PC board (5).
5. Remove three screws (6) and the ENTER switch (7).

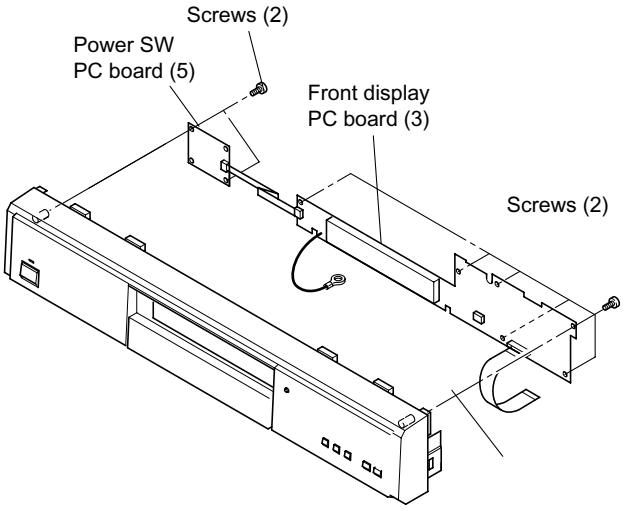


Fig. 2-1-12

1-3. Mechanism Parts

1-3-1. Mechanism Chassis Assembly

Note:

- When removing the mechanism chassis assembly (3), be sure to short-circuit the laser diode output land before removing the connector and the flexible cables.

  After replacing, open the land as it was after inserting the connector and flexible cables.

1. Remove the tray. (Refer to items 1-1-3 and 1-1-4.)
2. Remove three flexible cables (1).
3. Remove four screws (2) and remove the mechanism chassis assembly (3).

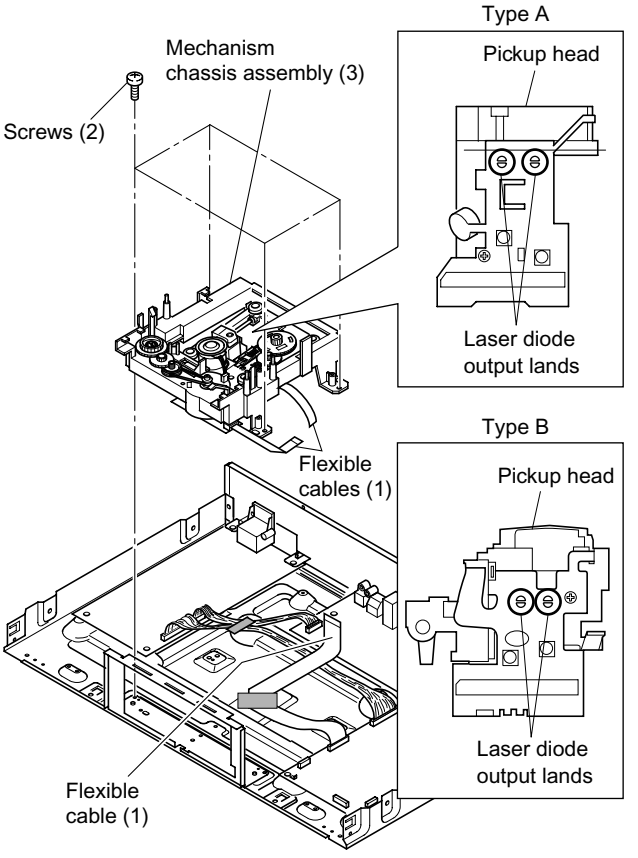


Fig. 2-1-13

1-3-2. Loading Belt

1. Remove the gear (1) by releasing the claw.
2. Remove the gear (2).
3. Remove the gear (3) and the loading belt (4).
4. Replace the loading belt (4) with a new one.
5. When mounting, perform the reverse order of the removal.

Note:

- When mounting the loading belt (4), twisting and attaching of a grease, etc. are not allowed.

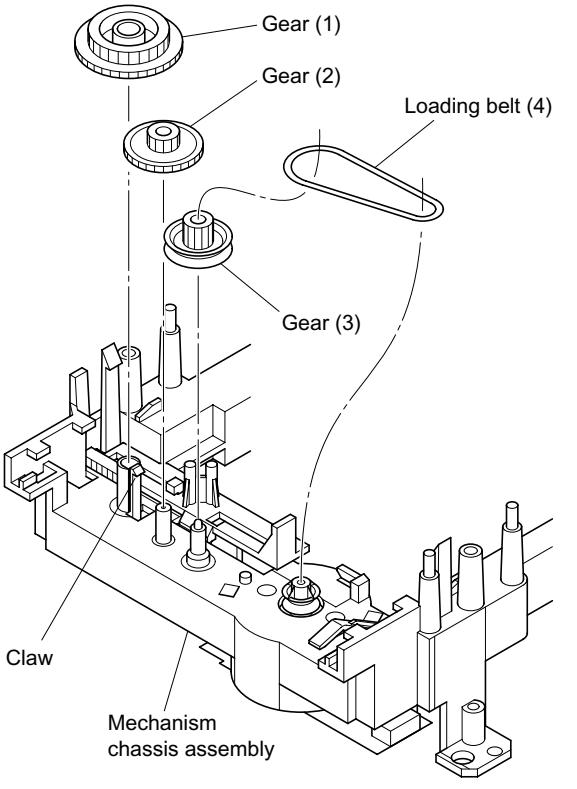


Fig. 2-1-14

1-3-3. Loading Motor

1. Remove the loading belt. (Refer to item 1-3-2.)
2. Remove two screws (1) and two claws. Then remove the loading motor (2) (with the loading motor PC board (3) attached).
3. Desolder the terminal section of the loading motor (2) and remove the loading motor PC board (3).
4. Replace the loading motor (2) with a new one.
5. When mounting, perform the reverse order of the removal.

Note:

- When replacing the loading motor, meet the polarity phase of the terminals. (Mount the motor with the label positioned as shown in Fig. 2-1-15.)

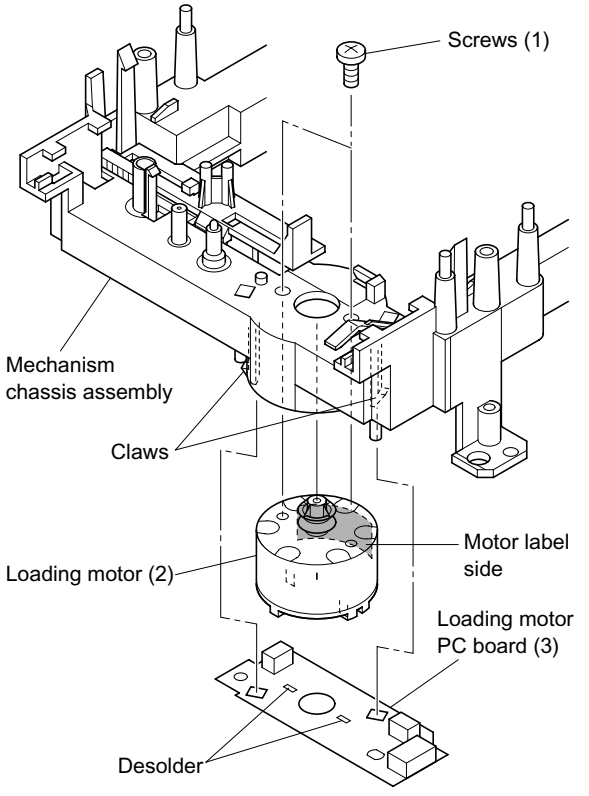


Fig. 2-1-15

1-3-4. Sub Chassis (with a pickup mechanism)

1. Turn the mechanism chassis assembly (1) upside down.
2. Remove one screw (2) and one washer (3) release the boss "A" from the claw. Then remove the sub chassis (4) (with the pickup mechanism) by sliding in the arrow direction.
3. When mounting, perform the reverse order of the removal.

Note:

- When mounting the sub chassis (4) (with the pickup mechanism), first, insert the boss "C" along the groove of the cam slider up/down cam (5) and next, the boss "B" and "A".
- The boss "A" may be used with washers. (One or two washers are used to prevent from the slust rattling. In some cases, no washer is used.)

  When the washer(s) is used, be sure to assemble as it was without losing.

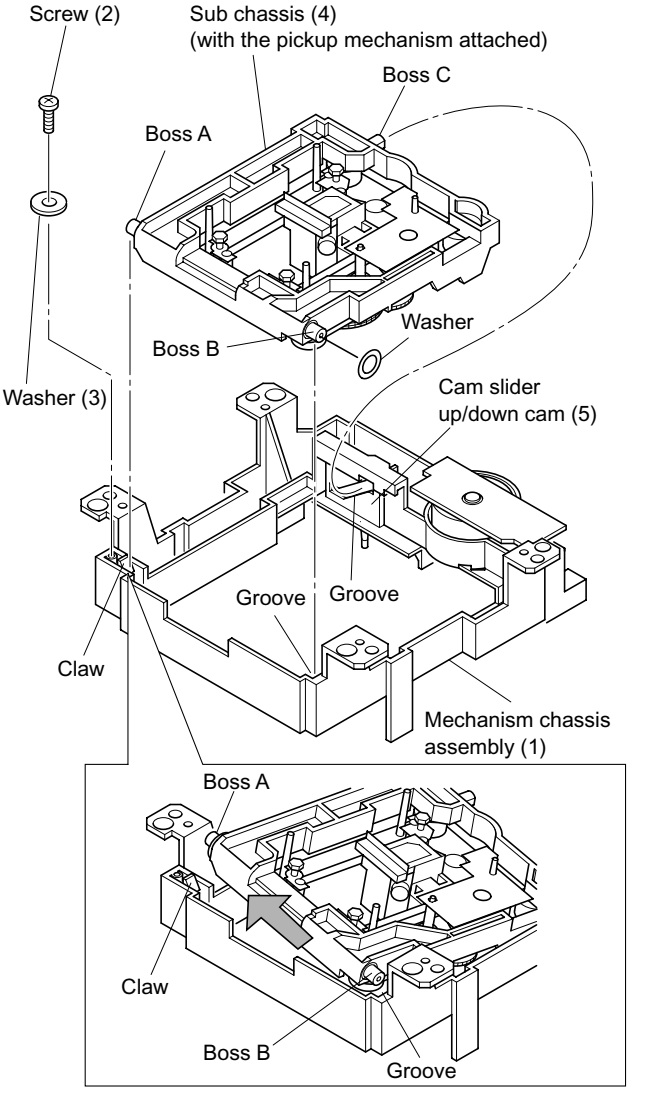


Fig. 2-1-16

1-3-5. Pickup Mechanism Assembly

<Removal>

1. Remove four screws (1) and four washers (2) then remove the pickup mechanism assembly (3).

<Mounting>

1. Replace the pickup mechanism assembly (3) with a new one.
2. When mounting, perform the reverse order of the removal.

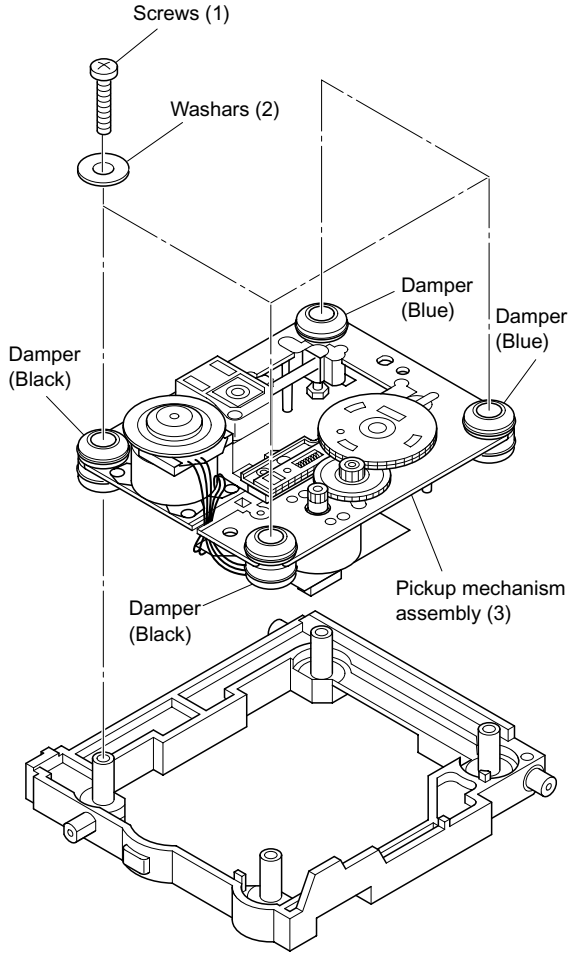


Fig. 2-1-17

Note:

- The dampers' color differs when used for the front side and the rear.
- When mounting the pickup mechanism assembly (2) with the screws (1), push the pickup mechanism assembly (2) downward without being caught and tighten the screws (1) after placing the washer with the damper bent.

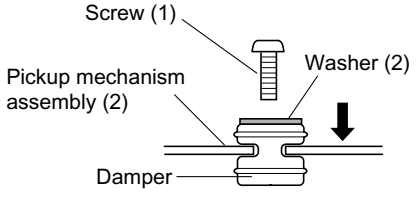


Fig. 2-1-18

1-3-6. Gear B Assembly, Gear A and Rack Gear Assembly

<Removal>

1. Remove one screw (3) and remove the gear B assembly (1).
2. Remove the gear A (2).
3. Remove one screw (5) and remove the rack gear assembly (4).

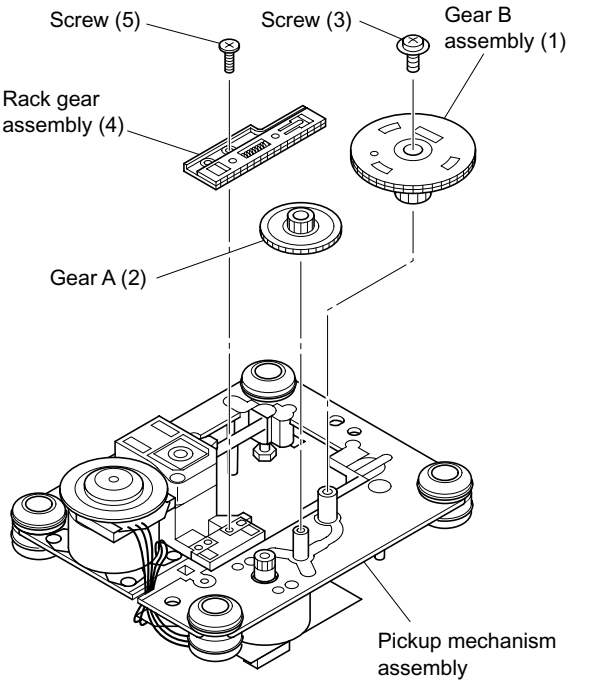


Fig. 2-1-19

<Mounting>

1. When mounting, perform the reverse order of the removal.
2. Mount the gear B assembly (1) by pushing the pickup head (5) to the disc motor side (arrow A direction) and shifting the upper gear of the rack gear assembly (4) in the arrow B direction. (Refer to Fig. 2-1-20.)
3. Fit the positioning holes on the upper gear and lower gear of the gear B assembly (1) and mount on the pickup mechanism assembly with the phase matched.

   At this time, note that the phase of the gear B assembly (1) and the gear A (2) shows the status in the Fig. 2-1-21.

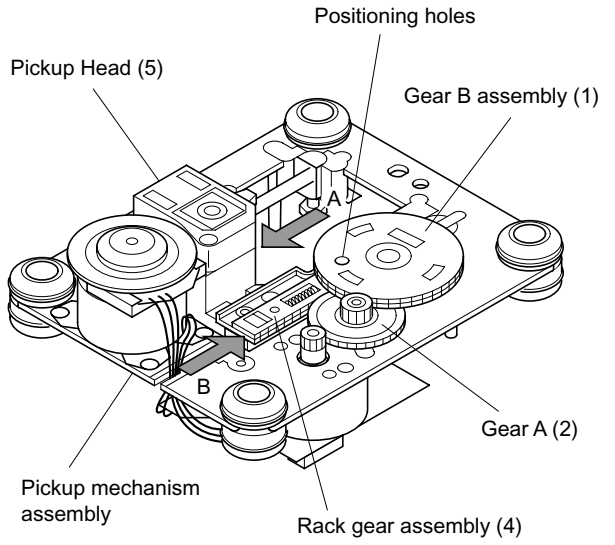


Fig. 2-1-20

Note:

- Mount the gear B assembly (1) and the gear A (2) with their gear teeth placed more than one tooth at least inside the shaded portion.

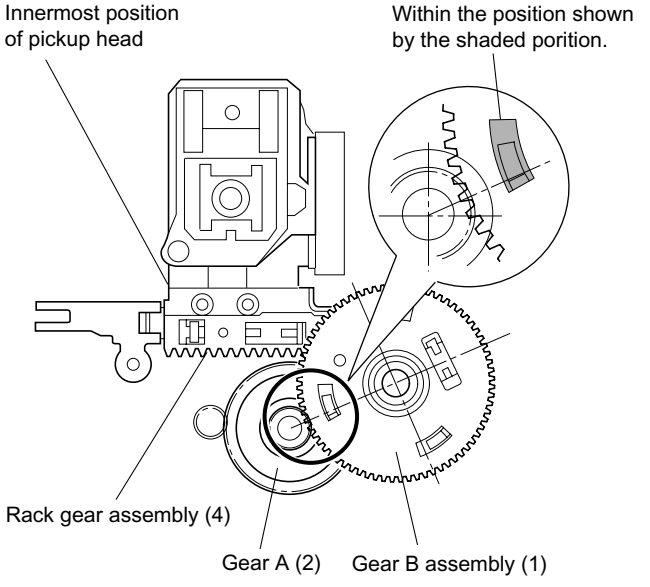

Innermost position of pickup head
Within the position shown by the shaded porition.
Rack gear assembly (4)
Gear A (2)
Gear B assembly (1)

Fig. 2-1-21

1-3-7. Feed Motor

<Removal>

1. Remove the gear B assembly and the gear A. (Refer to item 1-3-6.)
2. Remove two screws (1) and remove the feed motor (2) (with the feed motor PC board (3) attached). (Refer to Fig. 2-1-22.)
3. Desolder the terminals of the feed motor (2) and remove the feed motor PC board (3).

<Mounting>

1. Tighten the feed motor (2) on the pickup mechanism assembly with two screws (1).
2. Insert the feed motor PC board (3) with the positioning pin on the chassis matched and solder the terminals.
3. Perform the reverse order of the removal.

Note:

- After mounting, put the lead wires through the notch of the pickup mechanism assembly.
- When replacing the loading motor, meet the polarity phase of the terminals. (Mount the motor with the label positioned as shown in Fig. 2-1-22.)

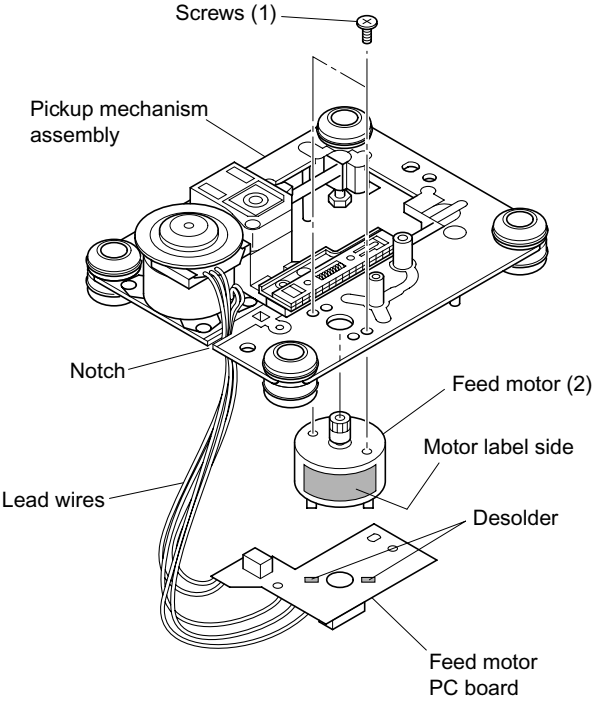


Fig. 2-1-22

SECTION 3
SERVICING DIAGRAMS

1. STANDING PC BOARDS FOR SERVICING

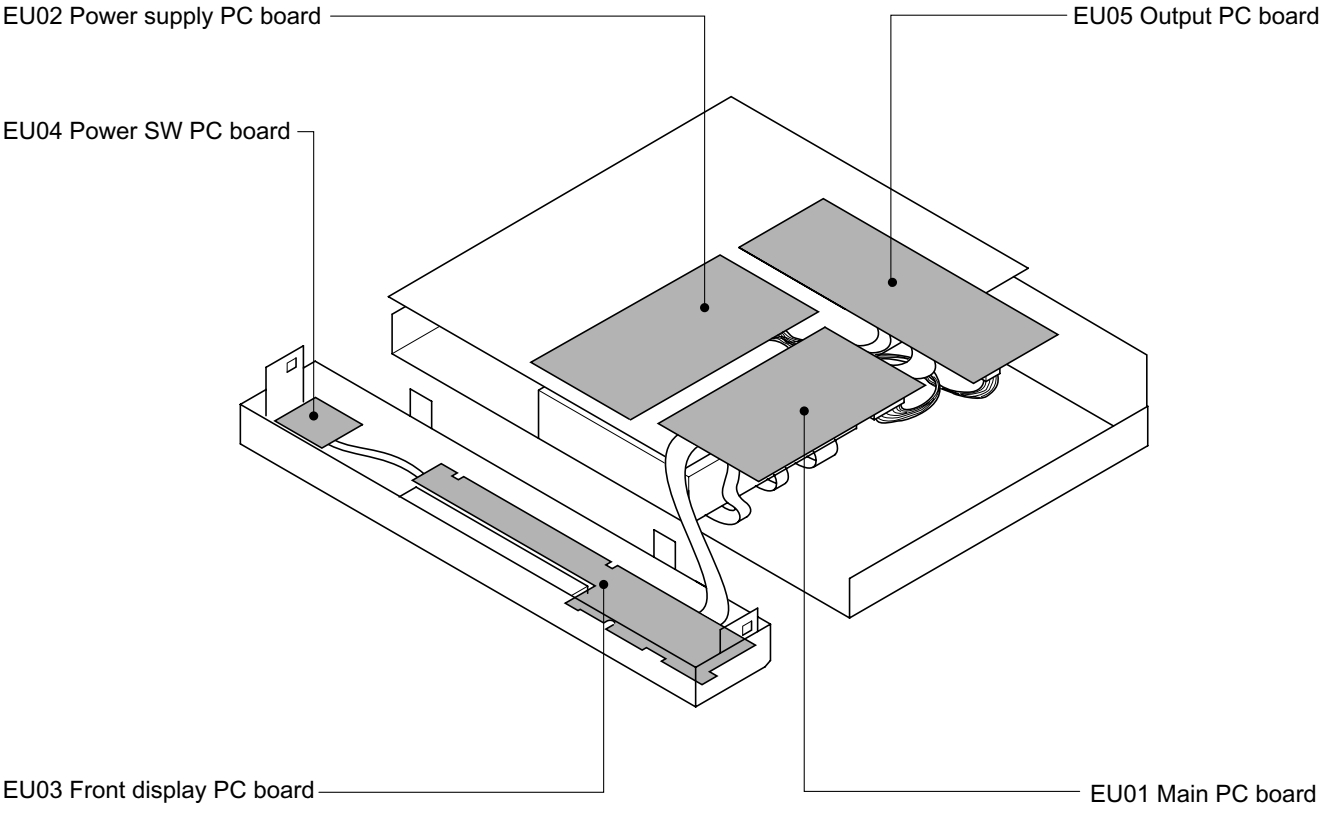


Fig. 3-1-1

2. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

2-1. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

2-2. Solid Resistor Indication

Unit	None .....Ω K .....kΩ M .....MΩ
Tolerance	None .....±5% B .....±0.1% C .....±0.25% D .....±0.5% F .....±1% G .....±2% K .....±10% M .....±20%
Rated Wattage	(1) Chip Parts None .....1/16W (2) Other Parts None .....1/6W Other than above, described in the Circuit Diagram.
Type	None .....Carbon film S .....Solid R .....Oxide metal film W .....Metal film W .....Cement FR .....Fusible

Eg. 1

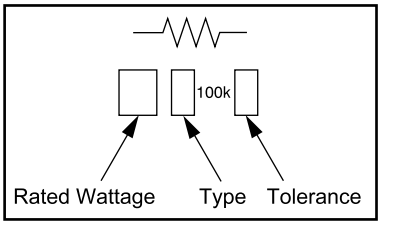


FIg. 3-2-1

2-3. Capacitance Indication

Symbol	.....Electrolytic, Special electrolytic NP .....Non polarity electrolytic .....Ceramic, plastic M .....Film .....Trimmer
Unit	None .....F μ .....μF p .....pF
Rated voltage	None .....50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None .....±5% or more B .....±0.1% C .....±0.25% D .....±0.5% F .....±1% G .....±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None .....more than ±5% pF B .....±0.1 pF C .....±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None .....SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

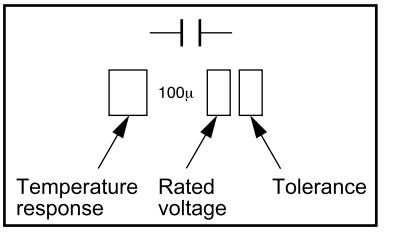


Fig. 3-2-2

Eg. 3

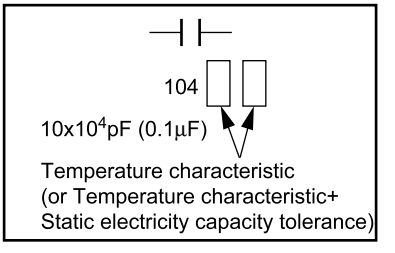


Fig. 3-2-3

2-4. Inductor Indication

Unit	None	H
	µ	µH
	m	mH
Tolerance	None	±5%
	B	±0.1%
	C	±0.25%
	D	±0.5%
	F	±1%
	G	±2%
	K	±10%
	M	±20%

Eg. 4

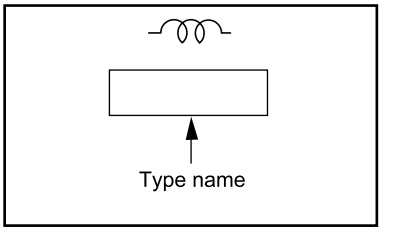


Fig. 3-2-4

2-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

Eg. 5

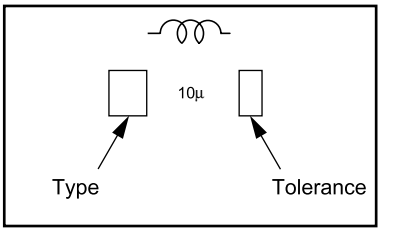


Fig. 3-2-5

2-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

3. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

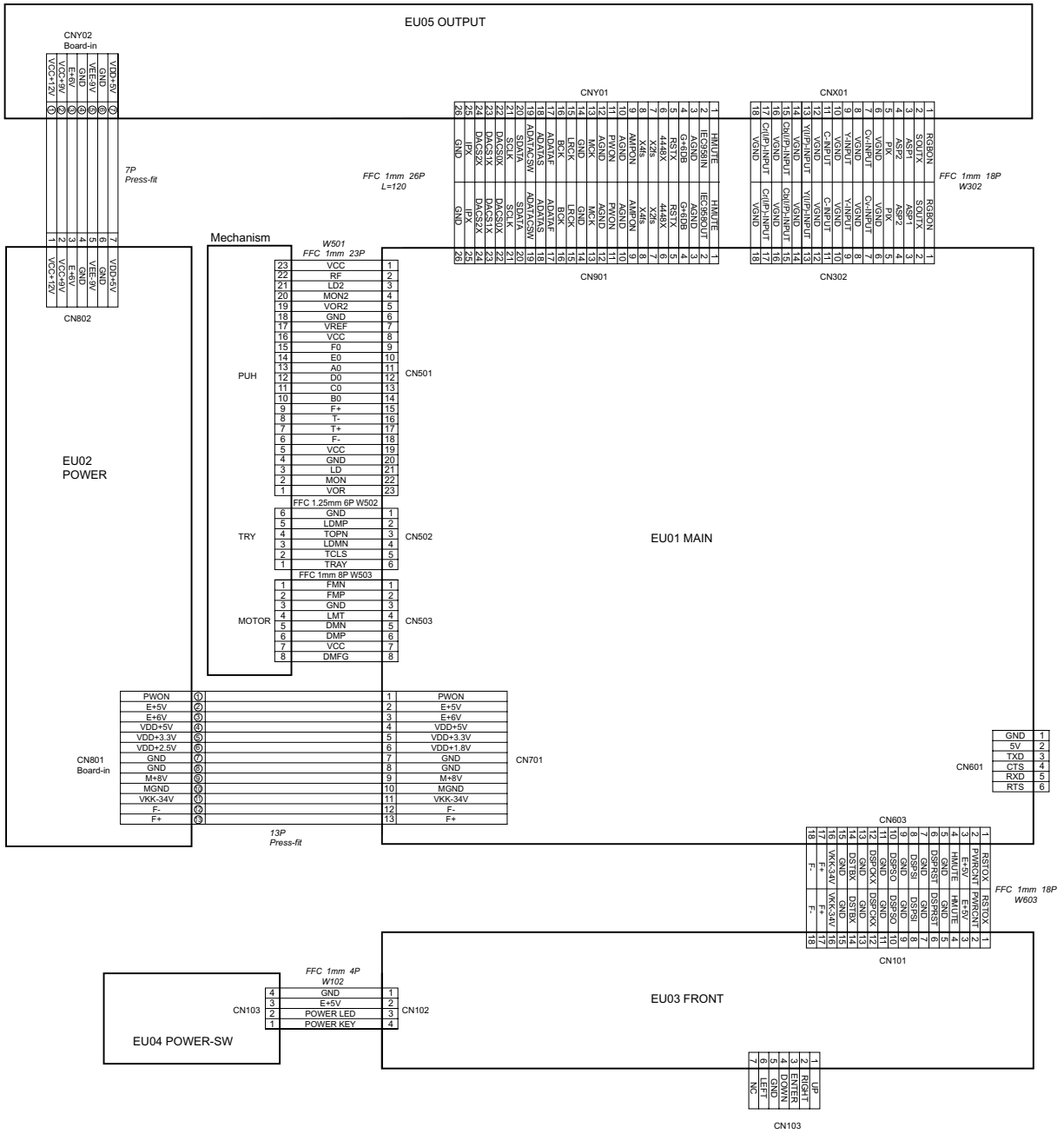


Fig. 3-3-1

4. BLOCK DIAGRAMS

4-1. Overall Block Diagram

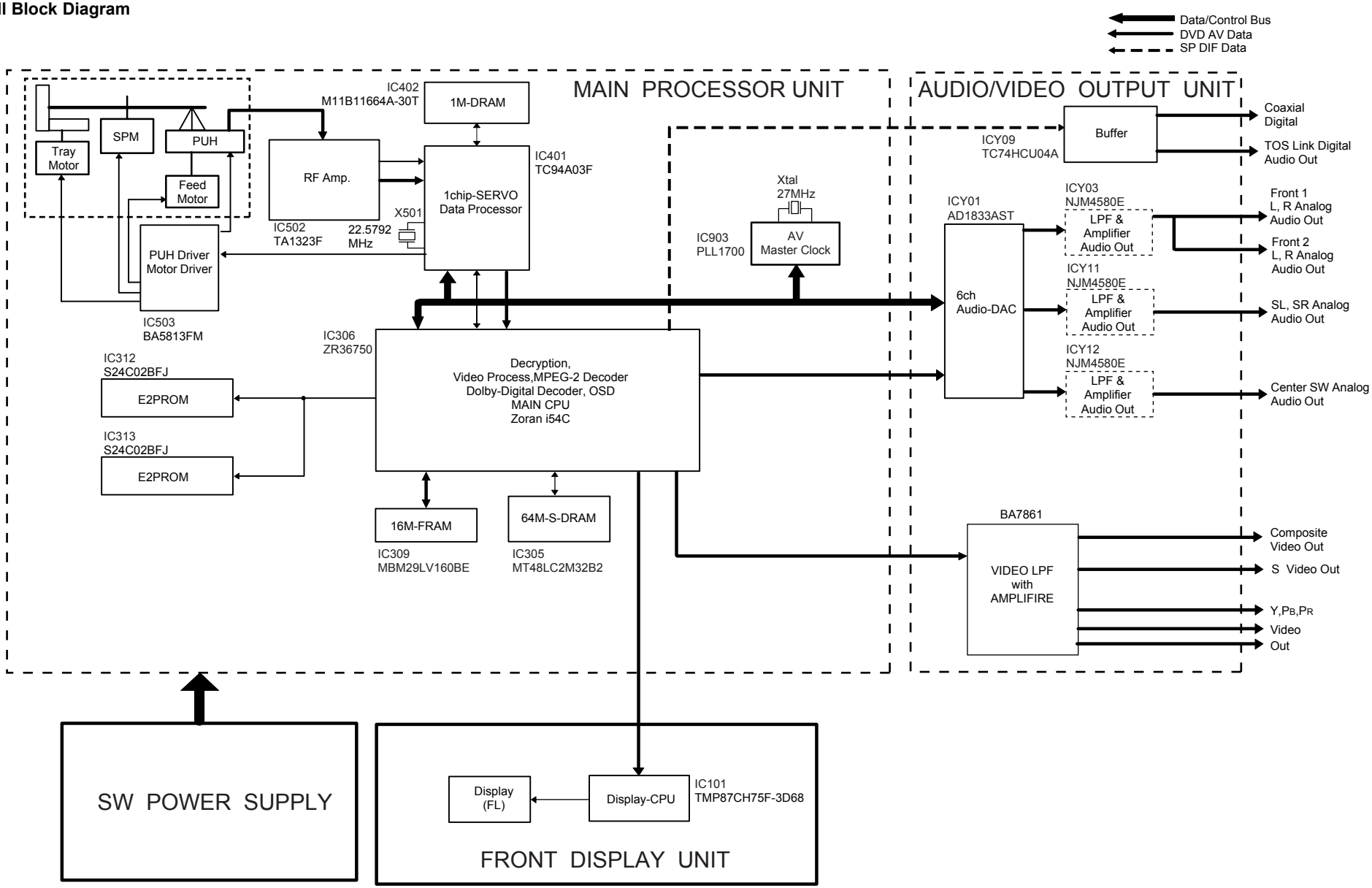


Fig.3-4-1

4-2. Power Supply Block Diagram

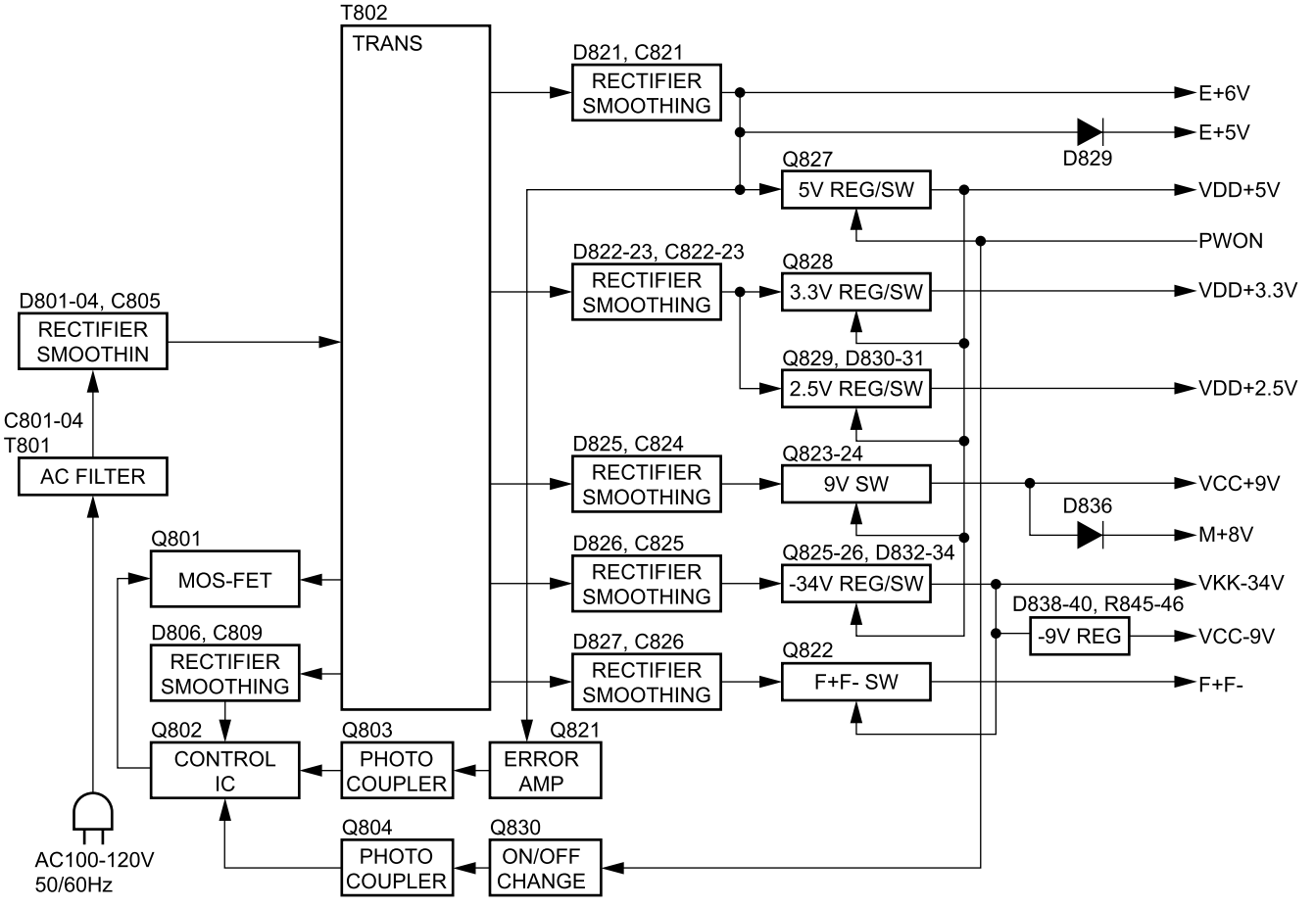


Fig. 3-4-2

4-3. Front Display, Power Switch Block Diagram

4-3-1. Front Display

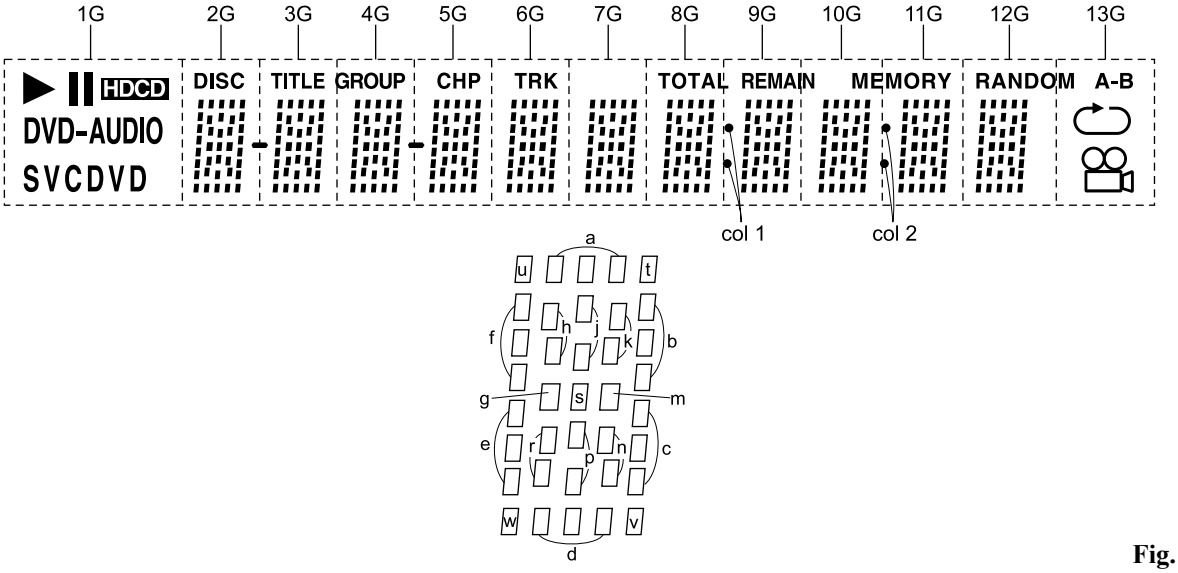


Fig. 3-4-3

4-3-2. Front Display Pattern

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	13G	14G
P1	▶	a	a	a	a	a	a	a	a	a	a	a	A
P2	❚❚	b	b	b	b	b	b	b	b	b	b	b	-B
P3	HDCD	j	j	j	j	j	j	j	j	j	j	j	↻
P4	DVD	h	h	h	h	h	h	h	h	h	h	h	—
P5	-AUDIO	k	k	k	k	k	k	k	k	k	k	k	—
P6	S	f	f	f	f	f	f	f	f	f	f	f	—
P7	V	g	g	g	g	g	g	g	g	g	g	g	🎥
P8	C	s	s	s	s	s	s	s	s	s	s	s	—
P9	D	m	m	m	m	m	m	m	m	m	m	m	—
P10	VD	c	c	c	c	c	c	c	c	c	c	c	—
P11	—	r	r	r	r	r	r	r	r	r	r	r	—
P12	—	n	n	n	n	n	n	n	n	n	n	n	—
P13	—	p	p	p	p	p	p	p	p	p	p	p	—
P14	—	e	e	e	e	e	e	e	e	e	e	e	—
P15	—	d	d	d	d	d	d	d	d	d	d	d	—
P16	—	t	t	t	t	t	t	t	t	t	t	t	—
P17	—	u	u	u	u	u	u	u	u	u	u	u	—
P18	—	v	v	v	v	v	v	v	v	v	v	v	—
P19	—	w	w	w	w	w	w	w	w	w	w	w	—
P20	—	-		—	—	—	—	col 1		—	—	—	—
P21	—	—	—	-		—	—	—	—	col 2		—	—
P22	—	DISC	TITLE	—	CHP	TRK	—	TOTAL		—	—	RANDOM	
P23	—	—	—	—	—	—	—	—	—	MEMORY		—	—
P24	—	—	GROUP		—	—	—	—	REMAIN		—	—	—

Fig. 3-4-4

4-3-3. Front Display, Power Switch Block Diagram

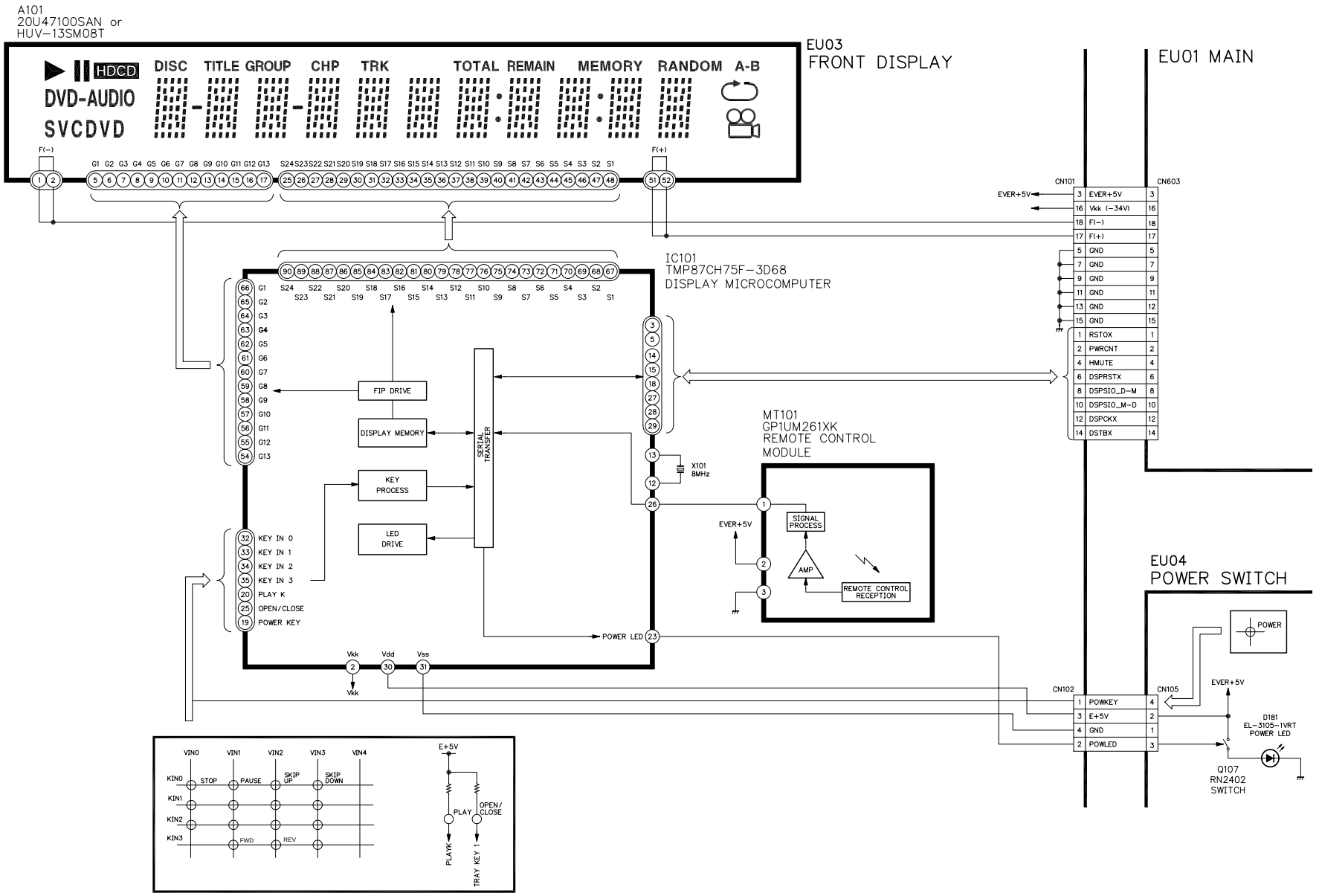


Fig. 3-4-5

4-4. Main Block Diagrams

4-4-1. Servo System Block Diagram

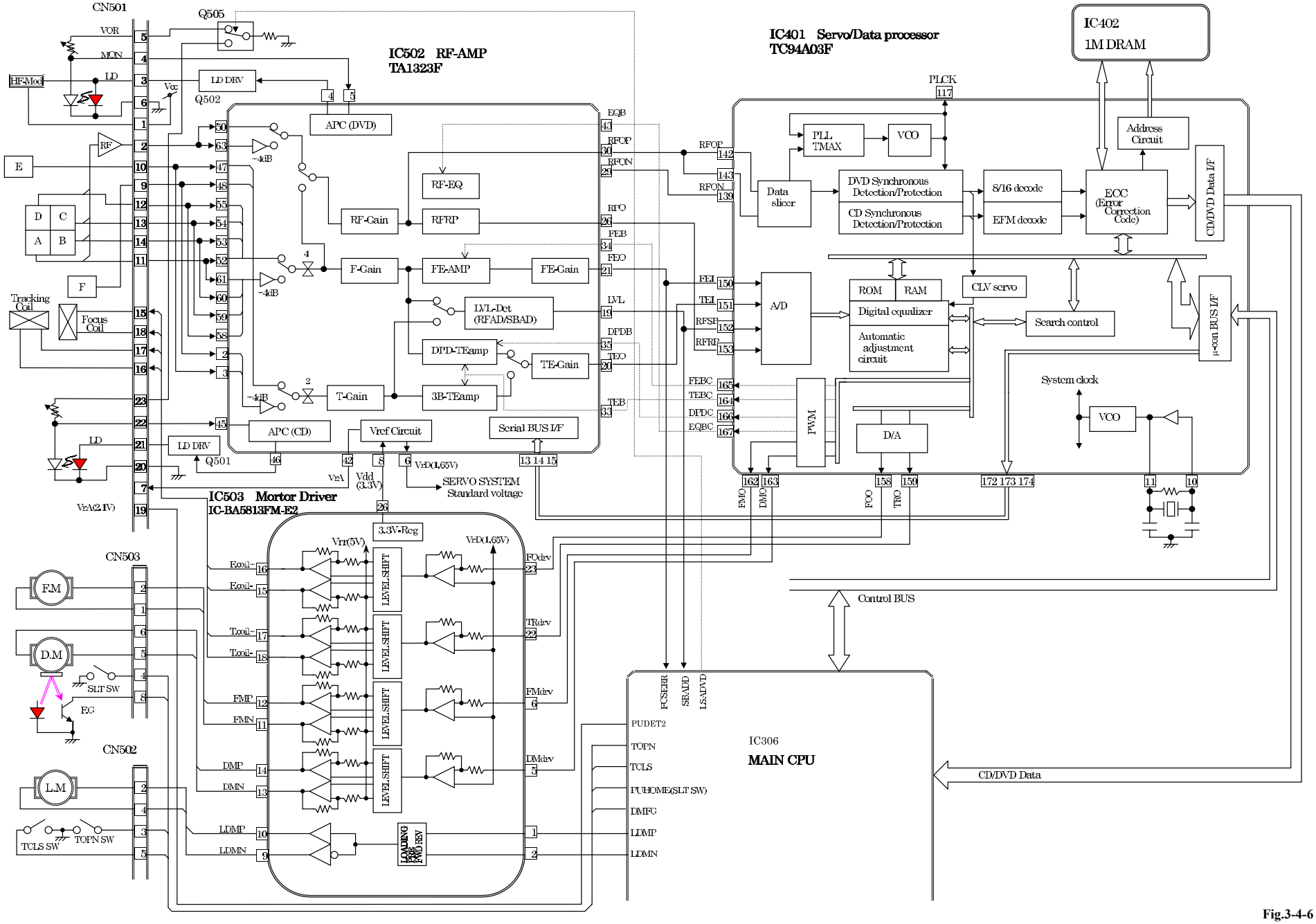


Fig.3-4-6

4-4-2. Logical System Block Diagram

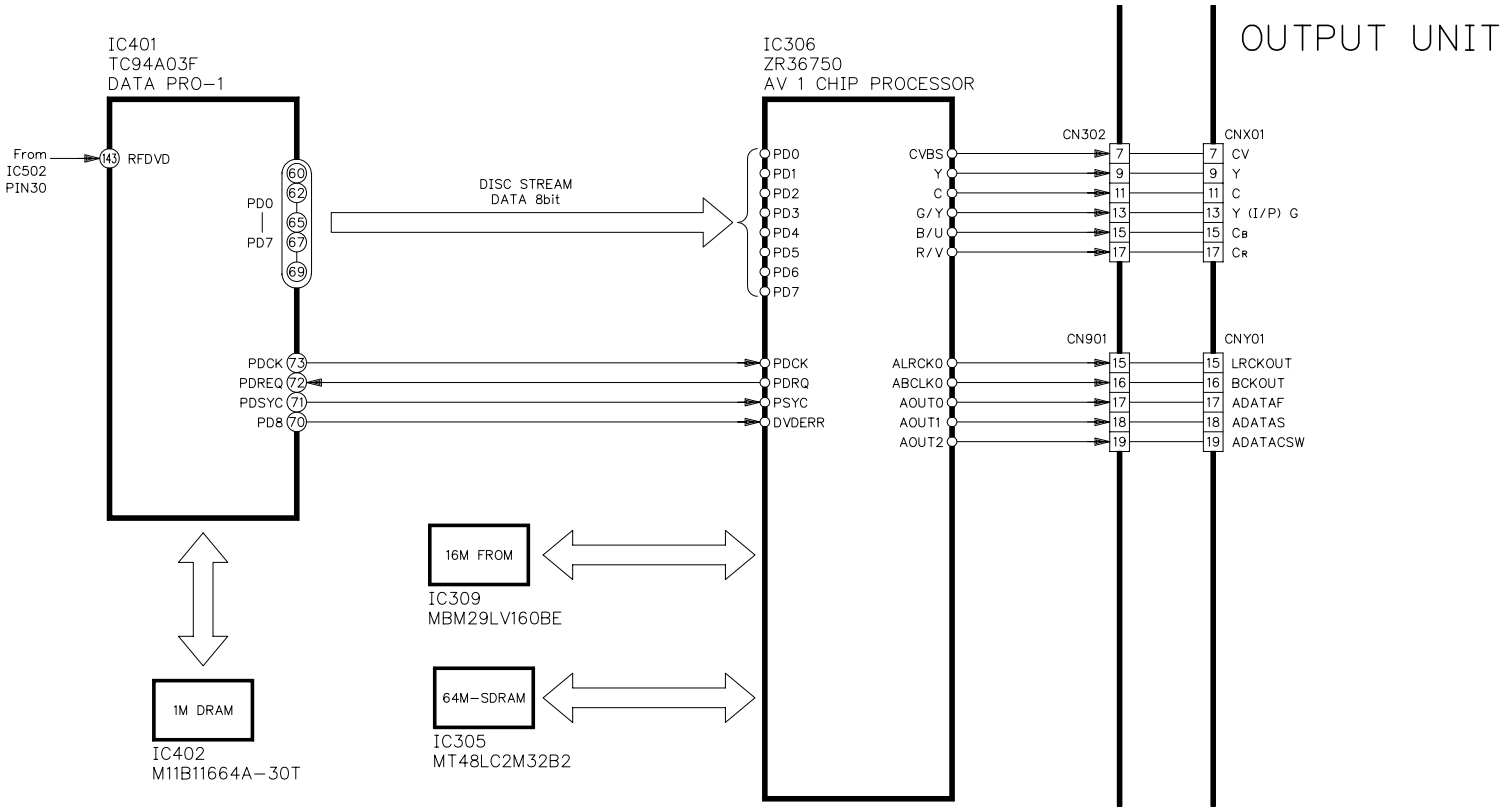


Fig. 3-4-7

4-5. Output Block Diagram

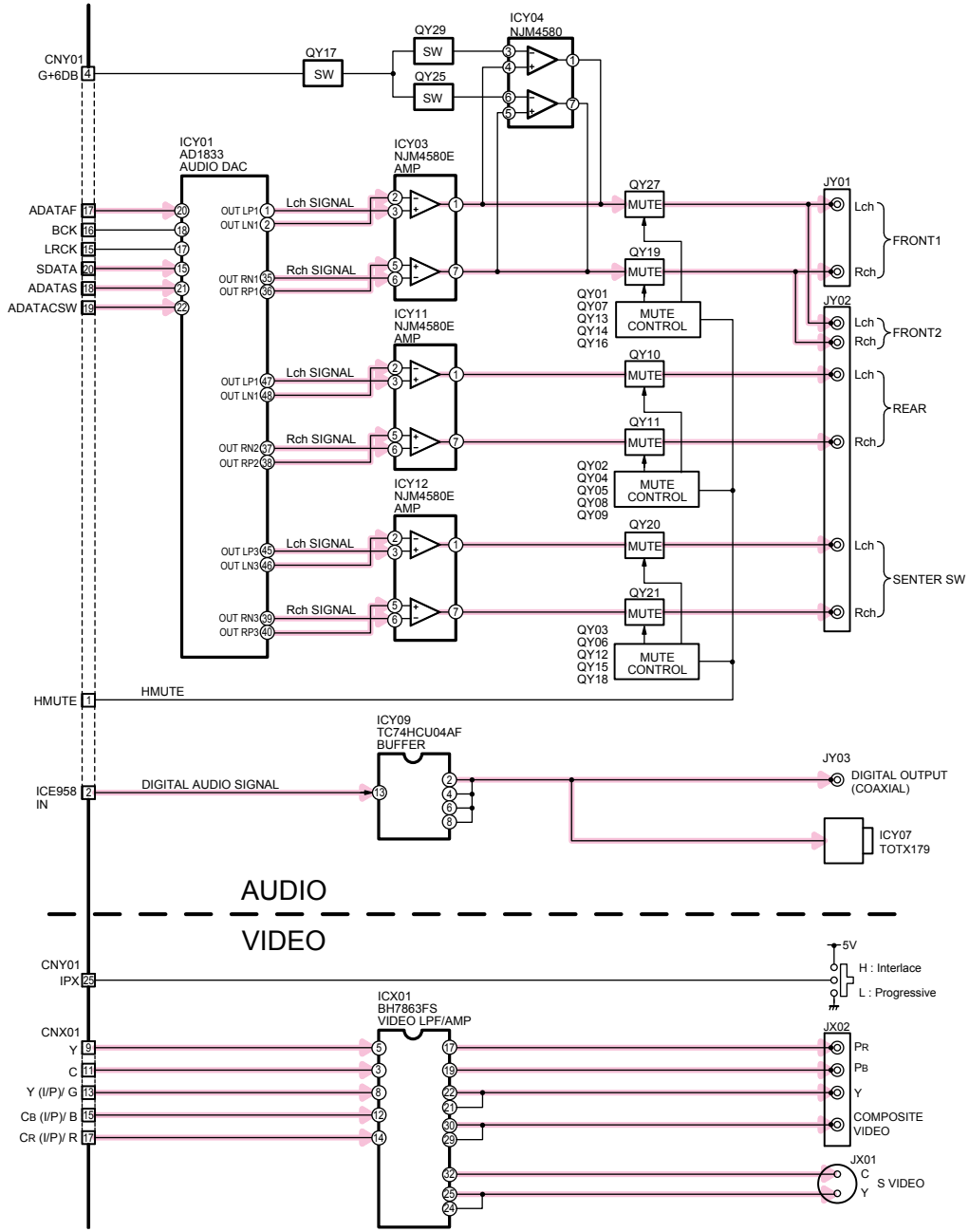
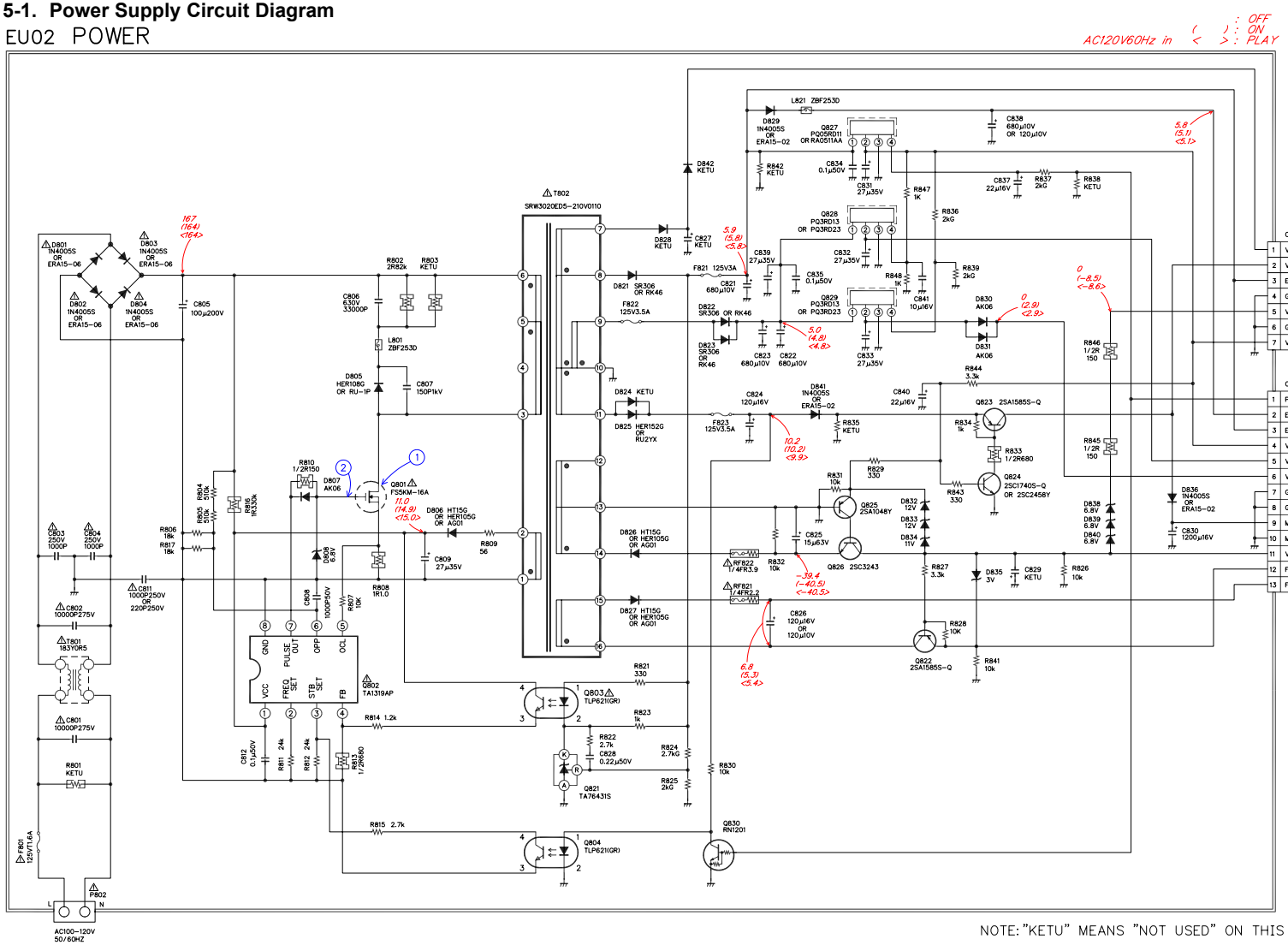


Fig. 3-4-8

5. CIRCUIT DIAGRAMS

5-1. Power Supply Circuit Diagram

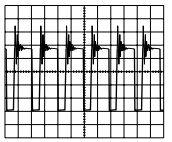
EU02 POWER



NOTE: "KETU" MEANS "NOT USED" ON THIS MODEL.

Fig. 3-5-1

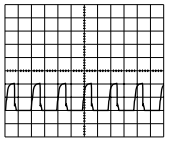
① Q801 Drain-Sourse



ON MODE
(AC120V 60Hz in)

V:50 V/div
H:5 μs/div

② Q801 Gate-Sourse



ON MODE
(AC120V 60Hz in)

V:5 V/div
H:5 μs/div

Fig. 3-5-2

(V)

	Q802						Q821			Q822			Q823			Q824			Q825		
	1	2	3	4	6	8	K	R	A	E	C	B	E	C	B	E	C	B	E	C	B
OFF	11.0	1.5	0.5	2.8	1.5	0	3.8	2.5	0	0	−6.8	0	10.0	0	10.0	0	10.0	0	0	−39.0	0
ON	14.9	1.0	1.7	2.0	1.5	0	4.0	2.5	0	−30.3	−30.4	−31.1	9.5	9.4	8.8	0	0.1	0.7	0.7	−40.0	0
PLAY	15.0	1.0	1.7	2.0	1.5	0	4.0	2.5	0	−30.2	−30.3	−31.0	9.1	9.0	8.4	0	0.1	0.7	0.7	−40.0	0

(V)

	Q826			Q827				Q828				Q829				Q830		
	E	C	B	1	2	3	4	1	2	3	4	1	2	3	4	E	C	B
OFF	−39.4	0	−39.0	5.9	5.0	0	0	5.0	3.3	0	0	5.0	3.3	0	0	0	1.0	0
ON	−40.5	−34.0	−40.0	5.8	5.0	0	5.0	4.8	3.3	0	2.5	4.8	3.3	0	2.5	0	0.1	5.0
PLAY	−40.5	−34.0	−40.0	5.8	5.0	0	5.0	4.8	3.3	0	2.5	4.8	3.3	0	2.5	0	0.1	5.0

5-2. Front Display, Power Switch Circuit Diagram

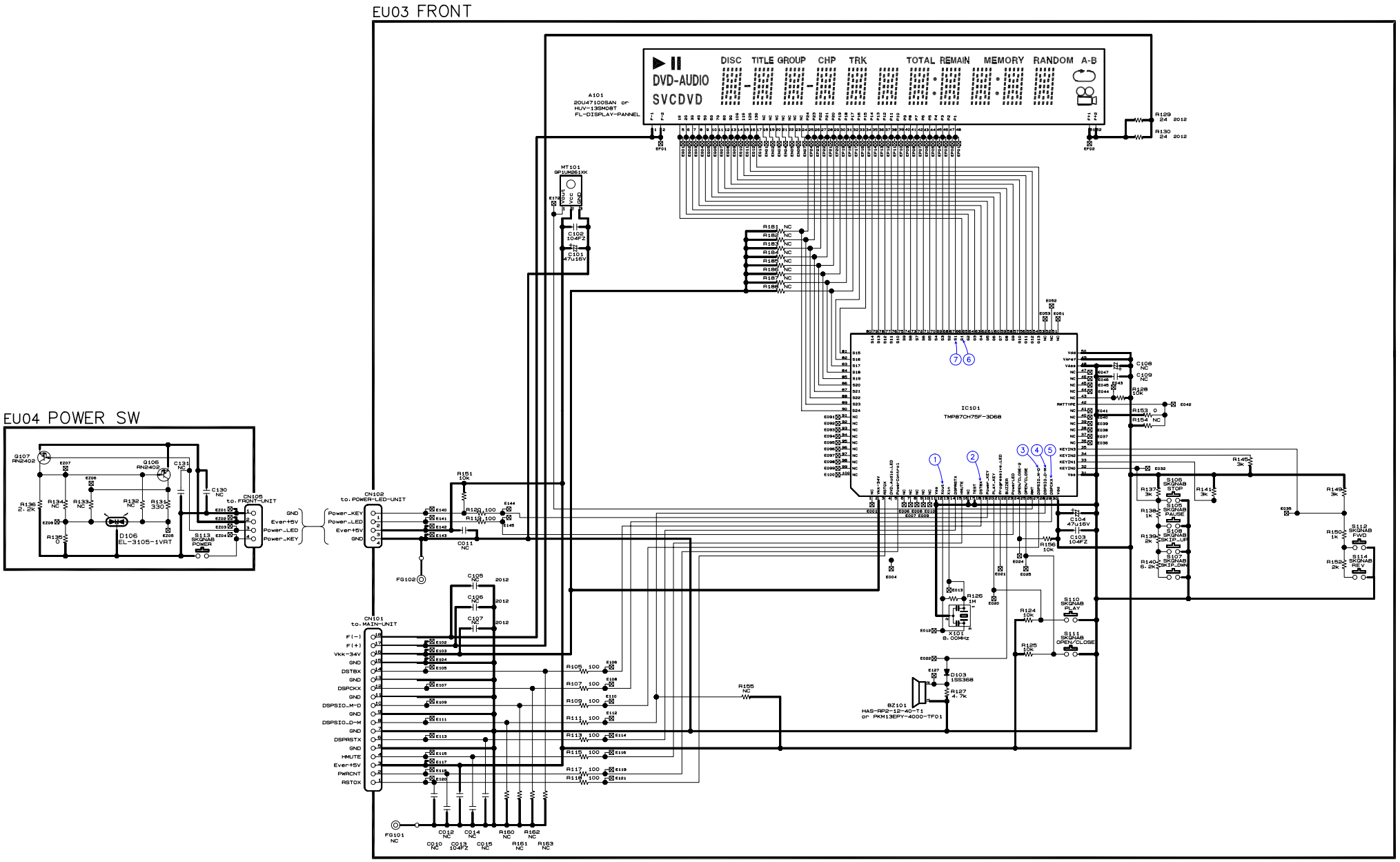


Fig. 3-5-3

Front Display, Power Switch Circuit Diagram

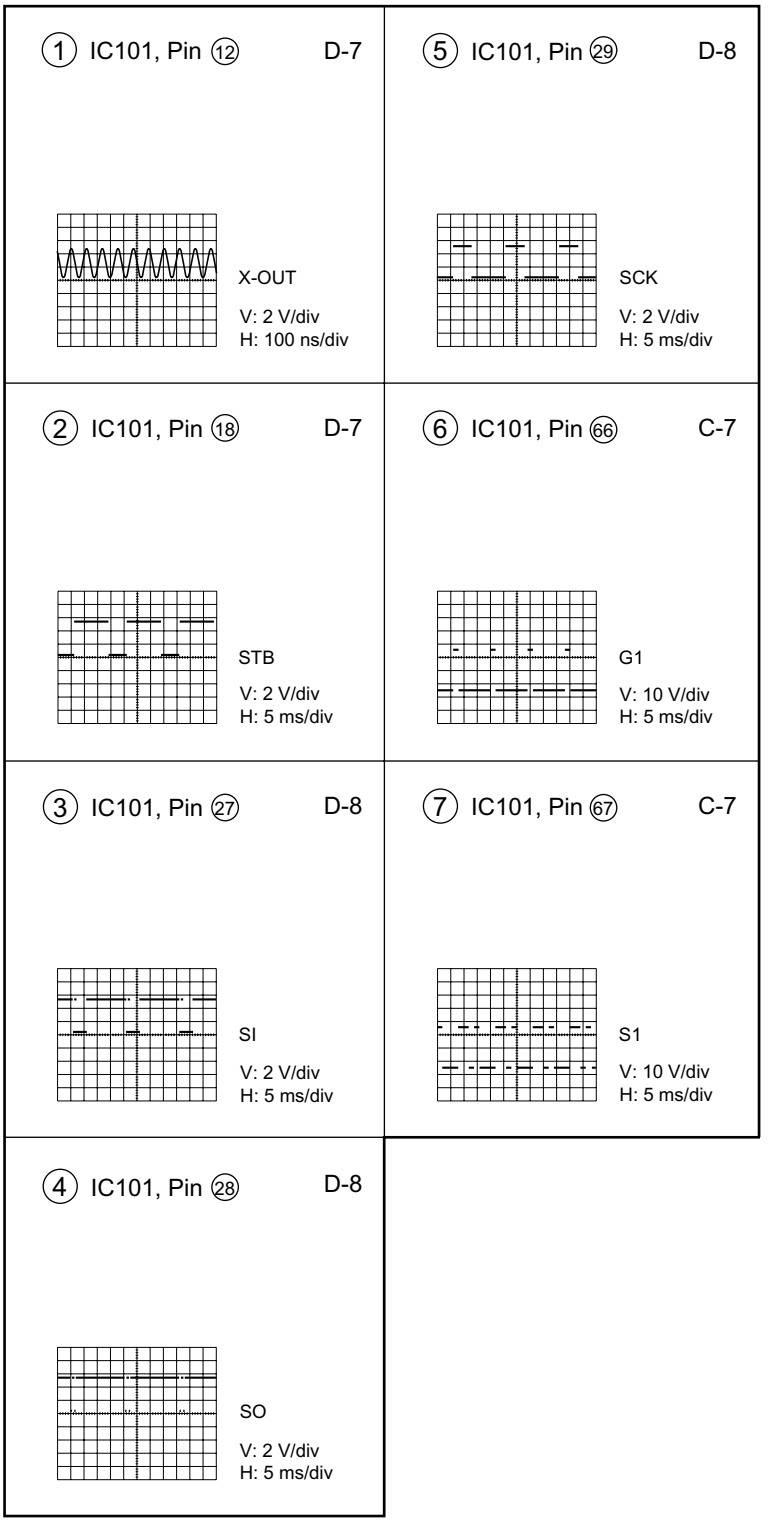
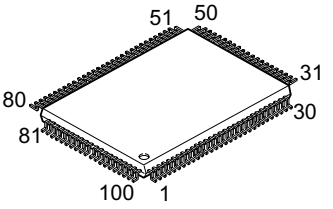


Fig. 3-5-4

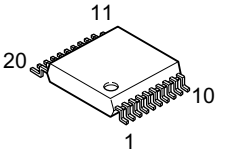
5-3. Main Circuit Diagrams

5-3-1. New Main ICs Information

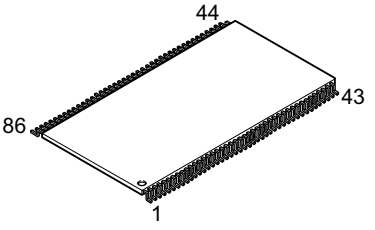
TMP87CH75F



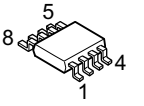
TC74VHCT



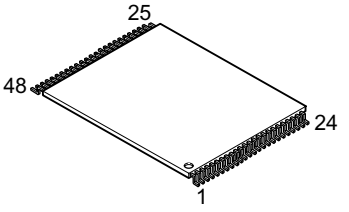
W986432DH



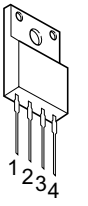
S24C02AFJA



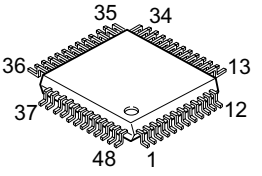
MBM29LV160



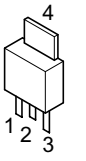
PQ3RD23
PQ05RD11



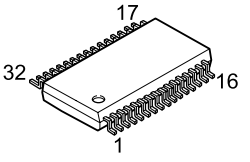
AD1833AST8



MPC2948T



BH7863



5-3-2. Main Circuit Diagram

IC502
TA1323F
IC401
TC94A03F
IC402
M11B11664A-30T
IC312
TC74VHCT244AFT
IC313
TC74VHCT244AFT
IC306
ZR36750
IC503
BA5813FM
IC501
TC7S04F
IC301
TC7S08F
IC302
TC7S08F
IC303
TC7S08F
IC304
S80145CLMC
IC309
MBM29LV160TE
IC305
MT48LC2M32B2
IC307
S24C02AFJ-TB
IC308
S24C02AFJ-TB
IC310
uPC2918
IC311
S814A33AUC
IC901
PLL1700
IC902
TC7SH08FU
IC903
S814A50AUC
IC904
TC7SH08FU
PU-HEAD-I/F
CN501
52808-2391
TRY-I/F 5700・7700
CN502
6207-3217
CN504
TRY-I/F 9700
DISC-MOTER-I/F
CN503
52808-0891
LASER DIRVE SIGNAL
PICKUP ERROR SIGNAL
FOCUS ERROR
TRACKING FRROR
FEED MOTOR SERVO SIGNAL
DISC MOTOR SERVO SIGNAL
TRAY CONTROL SIGNAL
TRACKING SERVO SIGNAL
FOCUS SERVO SIGNAL
JP301
OPEN:FLASH
CLOSE:DEBUG
J301
NC
EJTAG I/F
2.54mm pitch
RS232C-I/F TOP
CN601
53398-0690
CN603
52808-1891
FRONT-MPU-I/F
CN302
52808-1891
I/F VIDEO-SIGNAL
AUDIO-SIGNAL I/F
CN901
52808-2691
CN902
NC
VIDEO-BOARD I/F
CN301
POWER-SUPPLY
CN701
B13B-PH-SM3-TB
IC308
with DVD ADUIO
S24C02
without DVD AUDIO
NC
ICE I/F 2.54mm pitch
J302
NC
JP302:OPEN INT REG
CLOSE EX REG
MAIN CPU SUPORT
SMD49-27MHz

Fig. 3-5-5

5-4 Output Circuit Diagram

	SD4700/5700	SD5500
CNX02	NC	52806-0810
GX19	NC	DTA114EKA
RX14	NC	4.7k
GX20	NC	DTC114EKA
GX21	NC	DTA114EKA
RX15	NC	10k
RX17	NC	2.2K

	SD4700	SD5700/SD5500
GY25	NC	2SC3326B
GY29	NC	2SC3326B
ICY04	NC	NJM4580
RY17	0	NC
RY27	0	NC
CY26	NC	FZ0.1u
CY62	NC	FZ0.1u
CY01	NC	100u16V
CY24	NC	100u16V
RY31	NC	10k
GY17	NC	RN4601
RY40	NC	2.2K

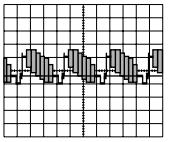
	SD4700	SD5700/SD5500
CY78	NC	CH100p
CY79	NC	CH100p
RY33	NC	2.7kD
RY37	NC	2.7kD
RY22	NC	2.7kD
RY87	NC	2.7kD
DX09	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
DX06	NC	1SS226
DX07	NC	1SS226

	SD4700	SD5700/SD5500
DX08	NC	1SS226
RX19	NC	10k
RX20	NC	10k
RX29	NC	15k
RX30	NC	3.3K
RX18	NC	75F
RX16	NC	75F
RX22	NC	75F

Fig. 3-5-6

Output Circuit Diagram

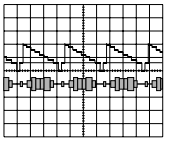
① JX01 Composite video output D-5



CVBS output
75Ω terminated
100% color bar

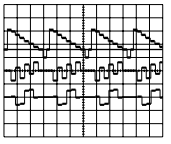
V: 500 mV/div
H: 20 µs/div

② JX01
(a) S-video output Y E-5
(b) S-video output C D-5



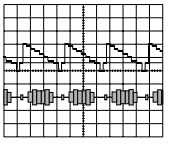
S-Y/C
75Ω terminated
100% color bar
(a) Y
(b) C
V: 500 mV/div
H: 20 µs/div

③ JX02 Y/CB/CR output E-5



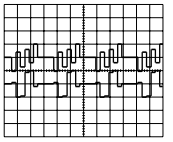
Component output
75Ω terminated
100% color bar
(Play)
Y
CB
CR
V: 500 mV/div
H: 20 µs/div

④ CNX01
(a) Pin ⑨ (Y) D-1
(b) Pin ⑪ (C) D-1



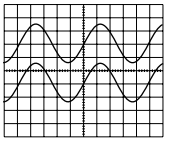
100% color bar
(Play)
(a)
(b)
V: 0.5 V/div
H: 20 µs/div

⑤ CNX01
(a) Pin ⑮ (CB) E-1
(b) Pin ⑰ (CR) E-1



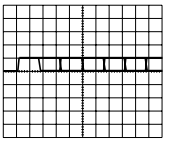
100% color bar (Play)
(a)
(b)
V: 0.5 V/div
H: 20 µs/div

⑥ JY01 L ch output A-8
/ R ch output A-8
(1 kHz, FS)



L ch output
R ch output
V: 2 V/div
H: 200 µs/div

⑦ JY03 COAXIAL -DIGITAL OUTPUT C-8



75Ω terminated
V: 500 mV/div
H: 0.1 µs/div

IC

ICY03
LPF & AMP

1	0
2	0
3	0
4	-10.0
5	0
6	0
7	0
8	9.5

ICY09
BUFFER

1	2.5
2	2.4
3	2.5
4	2.4
5	2.5
6	2.4
7	0
8	2.4
9	2.5
10	2.5
11	2.0
12	2.0
13	3.9
14	4.9

Fig. 3-5-7

5-5. Motor System Circuit Diagram

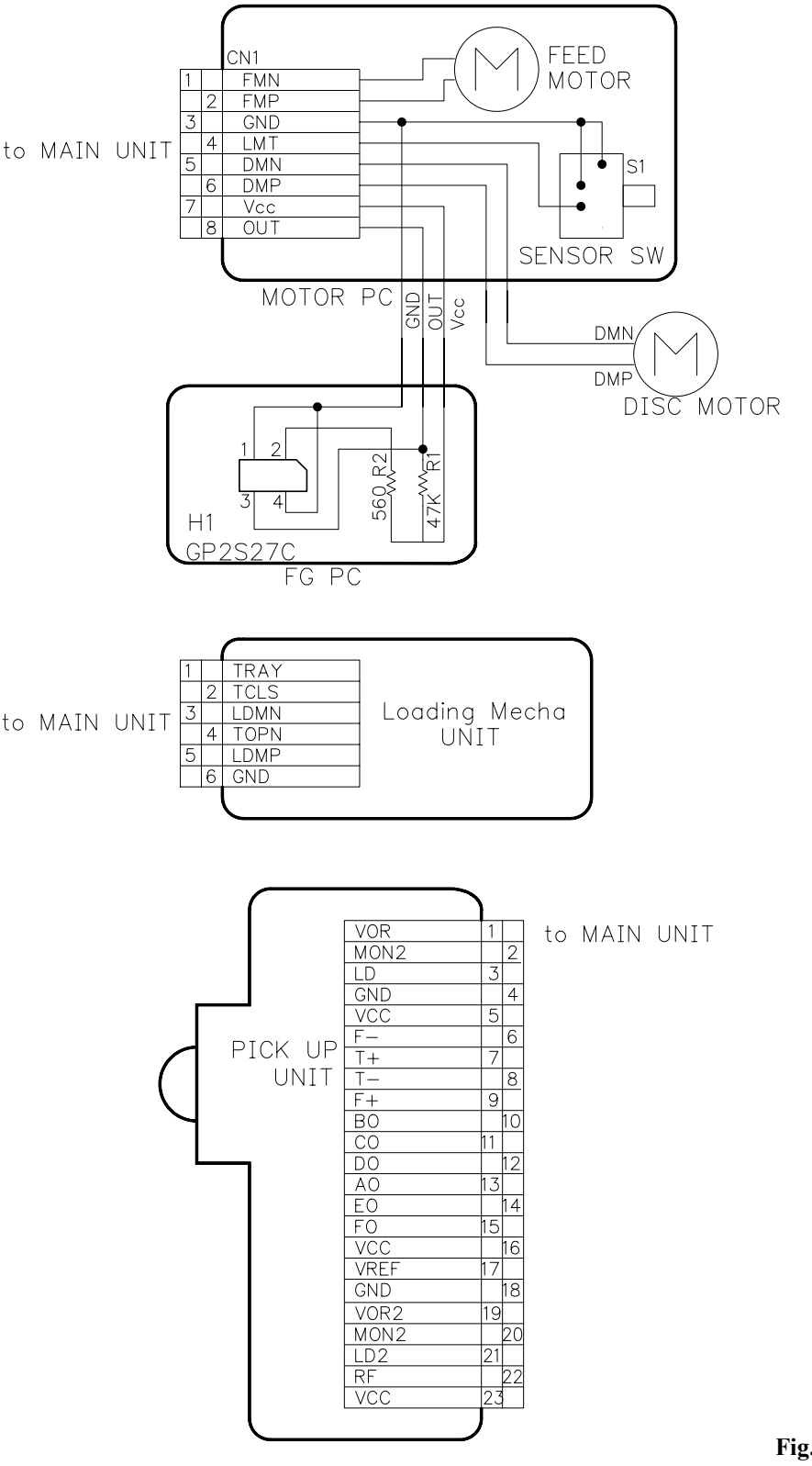
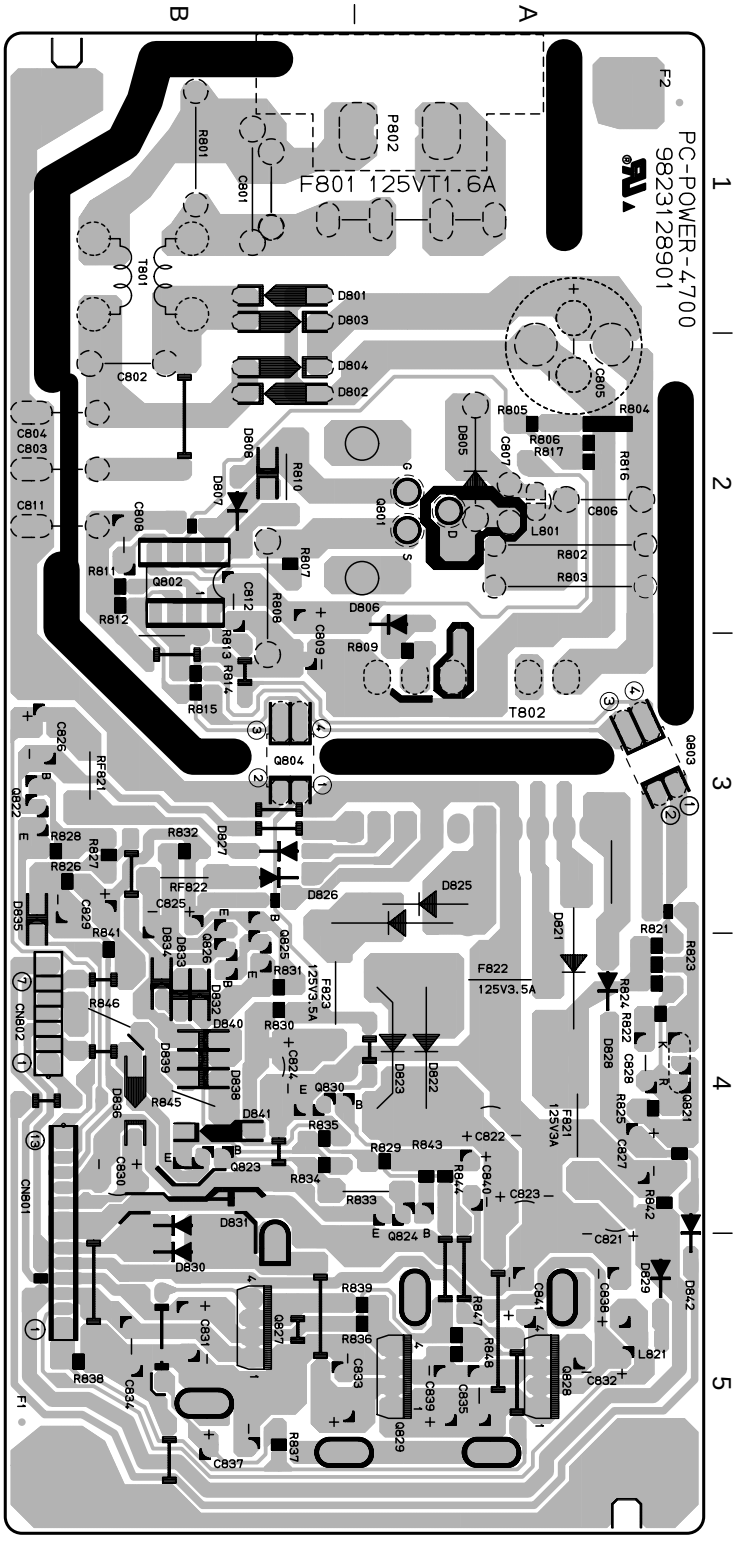


Fig. 3-5-8

6. PC BOARDS

6-1. Power Supply PC Board



Part No.	Location	Part No.	Location
C801	B1	F822	A4
C802	B2	F823	B4
C803	B2	L801	A2
C804	B2	L821	A5
C805	A2	P802	A1
C806	A2	Q801	A2
C807	A2	Q802	B2
C808	B2	Q803	A3
C809	B3	Q804	B3
C811	B2	Q821	A4
C812	B2	Q822	B3
C821	A4	Q823	B4
C822	A4	Q824	A4
C823	A4	Q825	B4
C824	B4	Q826	B4
C825	B3	Q827	B5
C826	B3	Q828	A5
C827	A4	Q829	A5
C828	A4	Q830	B4
C829	B3	R801	B1
C830	B4	R802	A2
C831	B5	R803	A2
C832	A5	R804	A2
C833	B5	R805	A2
C834	B5	R806	A2
C835	A5	R807	B2
C837	B5	R808	B2
C838	A5	R809	A3
C839	A5	R810	B2
C840	A4	R811	B2
C841	A5	R812	B2
CN801	B4	R813	B3
CN802	B4	R814	B3
D801	B1	R815	B3
D802	B2	R816	A2
D803	B1	R817	A2
D804	B2	R821	A4
D805	A2	R822	A4
D806	B2	R823	A4
D807	B2	R824	A4
D808	B2	R825	A4
D821	A4	R826	B3
D822	A4	R827	B3
D823	A4	R828	B3
D824	B3	R829	A4
D825	A3	R830	B4
D826	B3	R831	B4
D827	B3	R832	B3
D828	A4	R833	B4
D829	A5	R834	B4
D830	B5	R835	B4
D831	B4	R836	B5
D832	B4	R837	B5
D833	B4	R838	B5
D834	B4	R839	B5
D835	B4	R841	B4
D836	B4	R842	A4
D838	B4	R843	A4
D839	B4	R844	A4
D840	B4	R845	B4
D841	B4	R846	B4
D842	A5	R847	A5
F1	B5	R848	A5
F2	A1	RF821	B3
F801	A1	RF822	B3
F821	A4	T801	B1
		T802	A3

Fig. 3-6-1 EU02 Power Supply PC Board (Bottom side)

6-2. Main PC Board

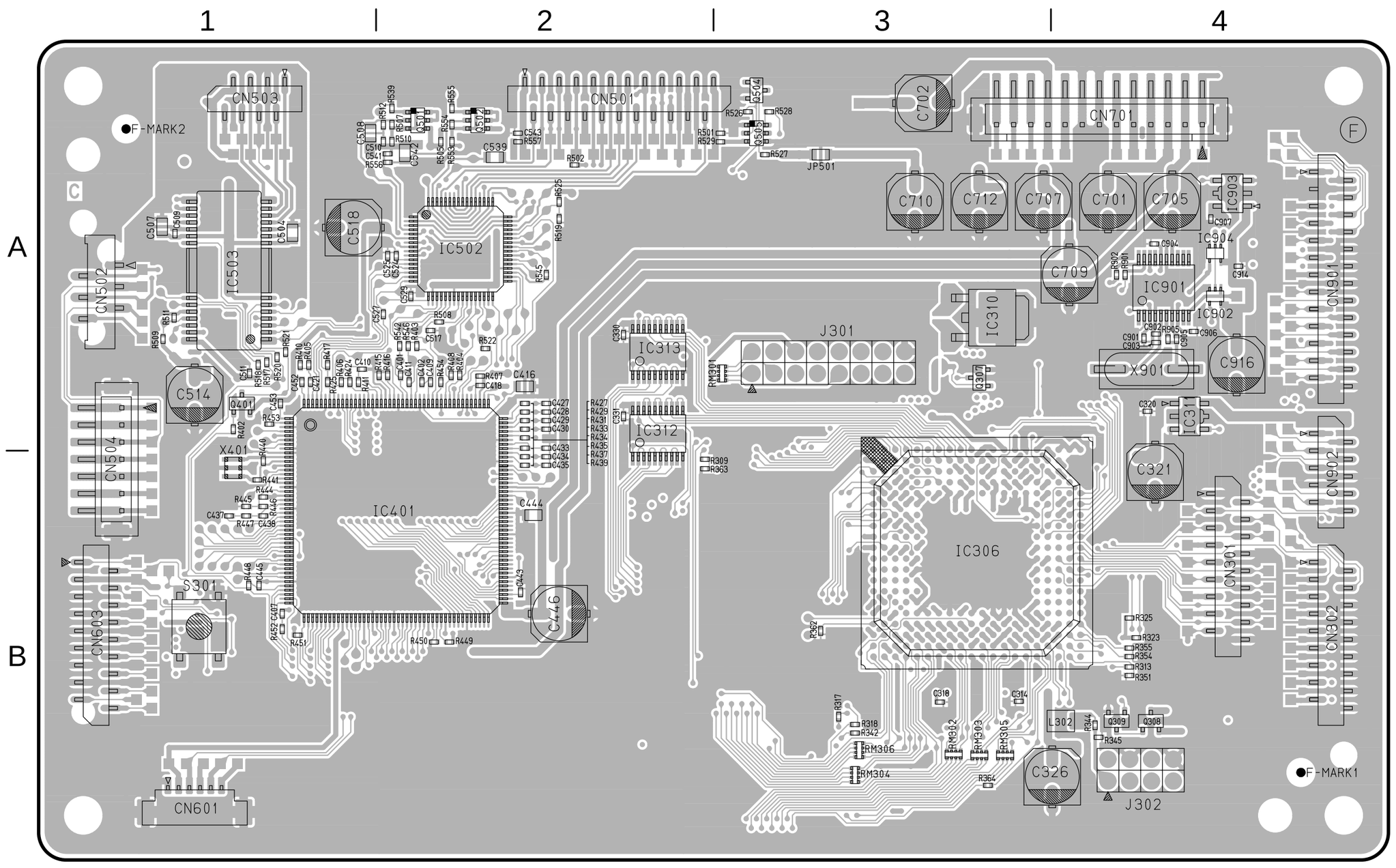


Fig. 3-6-2 EU01 Main PC Board (Top pattern and Top parts location diagram)

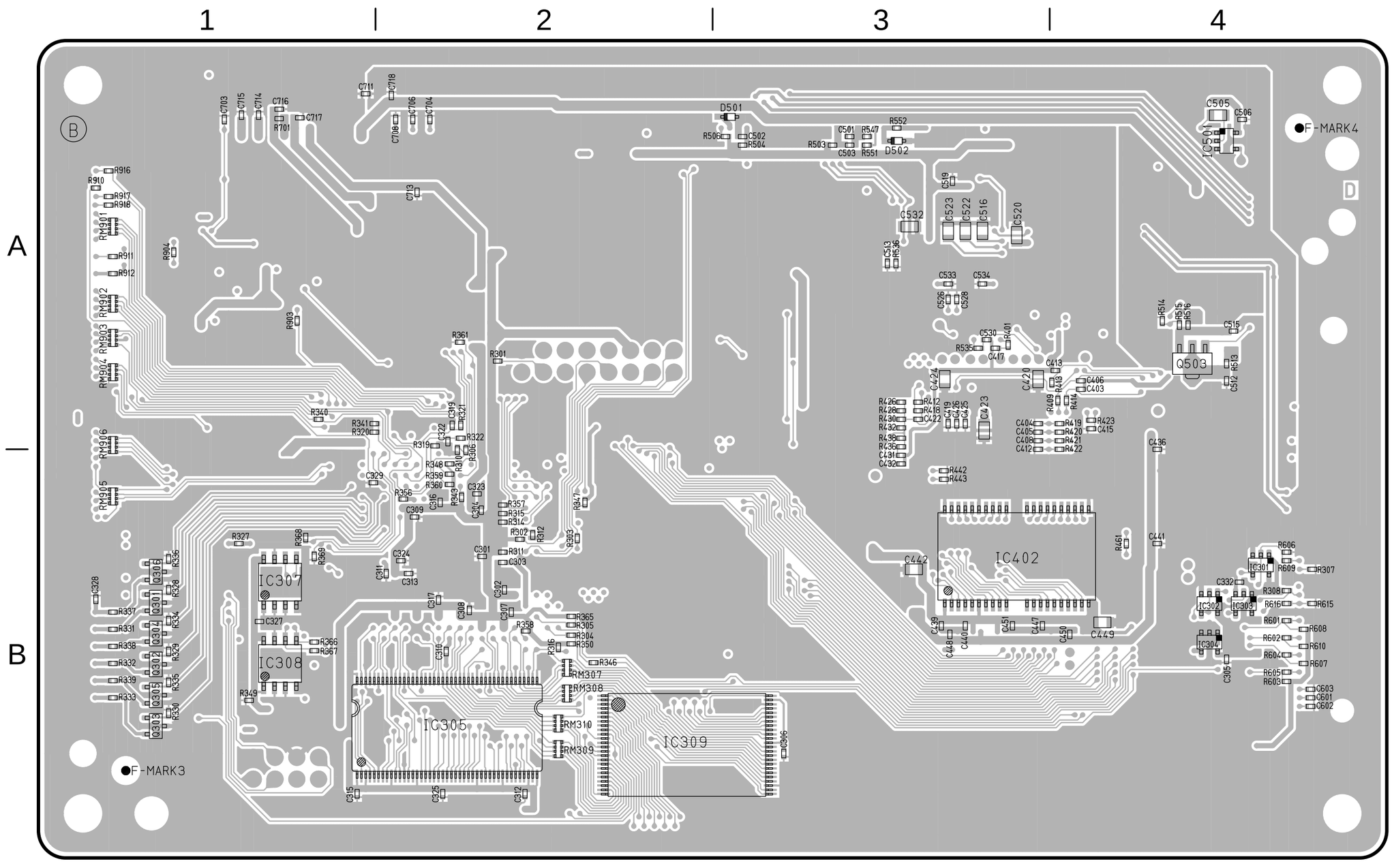


Fig. 3-6-3 EU01 Main PC Board (Bottom pattern and bottom parts location diagram)

Main PC Board (Top Side)

Part No.	Location	Part No.	Location	Part No.	Location
C314	B3	CN601	B1	R444	B1
C318	B3	CN603	B1	R445	B1
C320	A4	CN701	A4	R446	B1
C321	B4	CN901	A4	R447	B1
C326	B4	CN902	B4	R448	B1
C330	A2	IC306	B3	R449	B2
C331	A2	IC310	A3	R450	B2
C401	A2	IC311	A4	R451	B1
C402	A2	IC312	A2	R452	B1
C407	B1	IC313	A2	R453	A1
C409	A2	IC401	B2	R454	A2
C410	A1	IC502	A2	R501	A3
C411	A2	IC503	A1	R502	A2
C416	A2	IC901	A4	R505	A2
C418	A2	IC902	A4	R507	A2
C421	A1	IC903	A4	R508	A2
C427	A2	IC904	A4	R509	A1
C428	A2	J301	A3	R510	A2
C429	A2	J302	B4	R511	A1
C430	A2	JP301	A3	R512	A2
C433	A2	JP302	A3	R517	A1
C434	B2	JP501	A3	R518	A1
C435	B2	L302	B4	R519	A2
C437	B1	Q307	A3	R520	A1
C438	B1	Q308	B4	R521	A1
C443	B2	Q309	B4	R522	A2
C444	B2	Q401	A1	R525	A2
C445	B1	Q501	A2	R526	A3
C446	B2	Q502	A2	R527	A3
C452	A1	Q504	A3	R528	A3
C453	A1	Q505	A3	R529	A3
C504	A1	R309	B2	R539	A2
C507	A1	R313	B4	R542	A2
C508	A1	R317	B3	R545	A2
C509	A1	R318	B3	R546	A2
C510	A2	R323	B4	R553	A2
C511	A1	R325	B4	R554	A2
C514	A1	R342	B3	R555	A2
C517	A2	R344	B4	R556	A2
C518	A1	R345	B4	R557	A2
C524	A2	R351	B4	R901	A4
C525	A2	R354	B4	R902	A4
C527	A2	R355	B4	R905	A4
C529	A2	R362	B3	RM301	A3
C539	A2	R363	B2	RM302	B3
C541	A2	R364	B3	RM303	B3
C542	A2	R402	A1	RM304	B3
C543	A2	R403	A2	RM305	B3
C701	A4	R404	A2	RM306	B3
C702	A3	R405	A1	S301	B1
C705	A4	R406	A1	TP401	A1
C707	A3	R407	A2	TP402	A1
C709	A4	R408	A2	TP403	A2
C710	A3	R410	A1	TP404	A2
C712	A3	R411	A1	TP405	A2
C901	A4	R415	A2	TP406	A2
C902	A4	R416	A2	TP407	A2
C903	A4	R417	A1	TP408	A2
C904	A4	R424	A1	TP409	B2
C905	A4	R425	A1	TP410	B1
C906	A4	R427	A2	TP411	B1
C907	A4	R429	A2	TP412	B1
C914	A4	R431	A2	TP413	B1
C916	A4	R433	A2	TP414	A1
CN301	B4	R434	A2	TP501	A1
CN302	B4	R435	A2	TP502	A2
CN501	A2	R437	B2	TP503	A2
CN502	A1	R439	B2	TP504	A2
CN503	A1	R440	B1	X401	B1
CN504	B1	R441	B1	X901	A4

Main PC Board (Bottom Side)

Part No.	Location	Part No.	Location	Part No.	Location
C301	B2	C601	B4	R357	B2
C302	B2	C602	B4	R358	B2
C303	B2	C603	B4	R359	B2
C304	B2	C703	A1	R360	B2
C305	B4	C704	A2	R361	A2
C306	B3	C706	A2	R365	B2
C307	B2	C708	A2	R366	B1
C308	B2	C711	A1	R367	B1
C309	B2	C713	A2	R368	B1
C310	B2	C714	A1	R369	B1
C311	B2	C715	A1	R401	A3
C312	B2	C716	A1	R409	A4
C313	B2	C717	A1	R412	A3
C315	B1	C718	A2	R413	A4
C316	B2	D501	A3	R414	A4
C317	B2	D502	A3	R418	A3
C319	A2	IC301	B4	R419	A4
C322	A2	IC302	B4	R420	A4
C323	B2	IC303	B4	R421	A4
C324	B2	IC304	B4	R422	B4
C325	B2	IC305	B2	R423	A4
C327	B1	IC307	B1	R426	A3
C328	B1	IC308	B1	R428	A3
C329	B1	IC309	B2	R430	A3
C332	B4	IC402	B3	R432	A3
C403	A4	IC501	A4	R436	A3
C404	A3	Q301	B1	R438	A3
C405	A3	Q302	B1	R442	B3
C406	A4	Q303	B1	R443	B3
C408	A3	Q304	B1	R461	B4
C412	B3	Q305	B1	R503	A3
C413	A4	Q306	B1	R504	A3
C415	A4	Q503	A4	R506	A3
C417	A3	R301	A2	R513	A4
C419	A3	R302	B2	R514	A4
C420	A3	R303	B2	R515	A4
C422	A3	R304	B2	R516	A4
C423	A3	R305	B2	R535	A3
C424	A3	R306	B2	R536	A3
C425	A3	R307	B4	R547	A3
C426	A3	R308	B4	R551	A3
C431	B3	R310	B2	R552	A3
C432	B3	R311	B2	R601	B4
C436	B4	R312	B2	R602	B4
C439	B3	R314	B2	R603	B4
C440	B3	R315	B2	R604	B4
C441	B4	R316	B2	R605	B4
C442	B3	R319	A2	R606	B4
C447	B3	R320	A1	R607	B4
C448	B3	R321	A2	R608	B4
C449	B4	R322	A2	R609	B4
C450	B4	R327	B1	R610	B4
C451	B3	R328	B1	R615	B4
C501	A3	R329	B1	R616	B4
C502	A3	R330	B1	R701	A1
C503	A3	R331	B1	R903	A1
C505	A4	R332	B1	R904	A1
C506	A4	R333	B1	R910	A1
C512	A4	R334	B1	R911	A1
C513	A3	R335	B1	R912	A1
C515	A4	R336	B1	R916	A1
C516	A3	R337	B1	R917	A1
C519	A3	R338	B1	R918	A1
C520	A3	R339	B1	RM307	B2
C522	A3	R340	A1	RM308	B2
C523	A3	R341	A1	RM309	B2
C526	A3	R343	B2	RM310	B2
C528	A3	R346	B2	RM901	A1
C530	A3	R347	B2	RM902	A1
C532	A3	R348	B2	RM903	A1
C533	A3	R349	B1	RM904	A1
C534	A3	R350	B2	RM905	B1
		R356	B2	RM906	A1

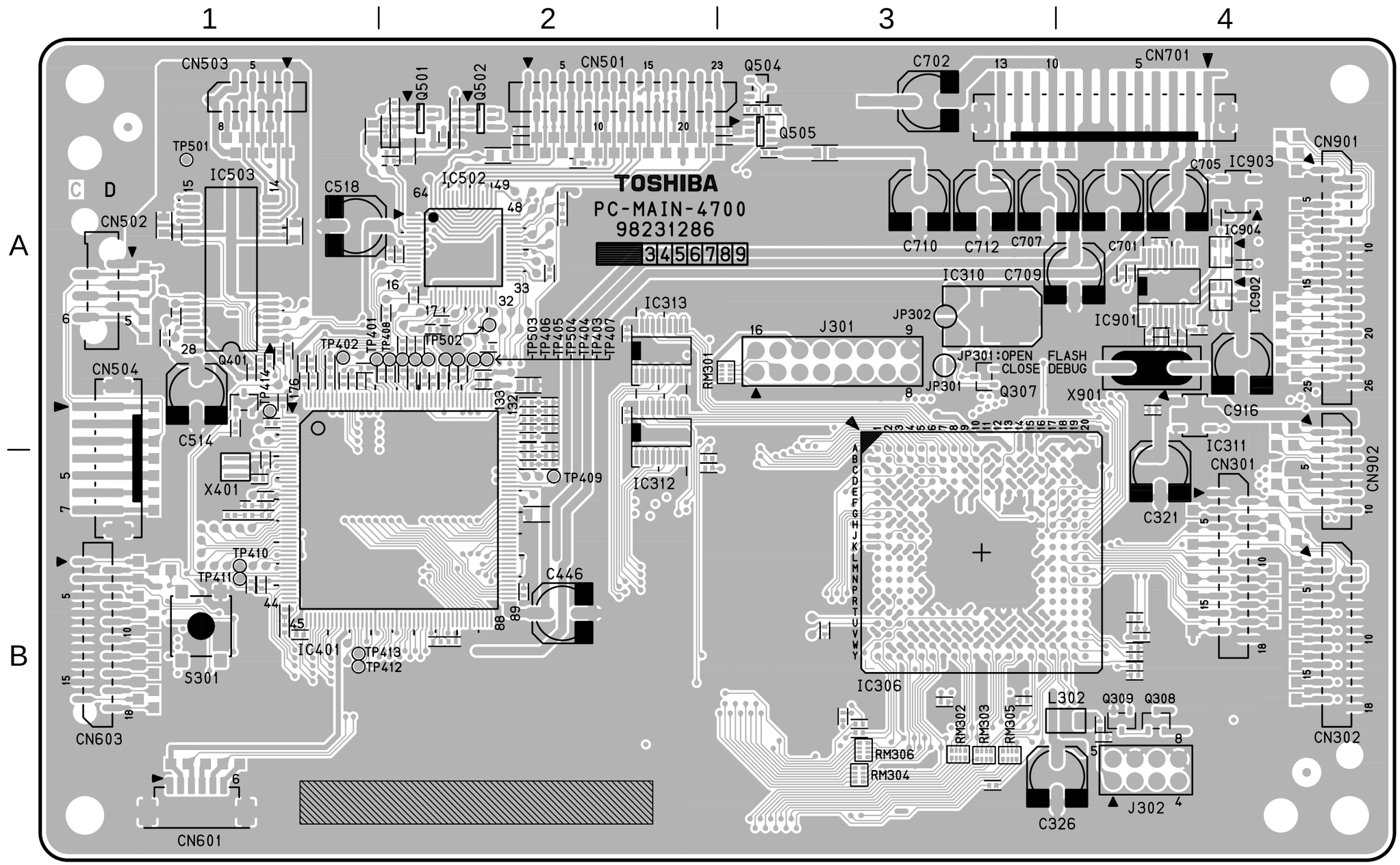


Fig. 3-6-4 EU01 Main PC Board (Top pattern, character/symbol)

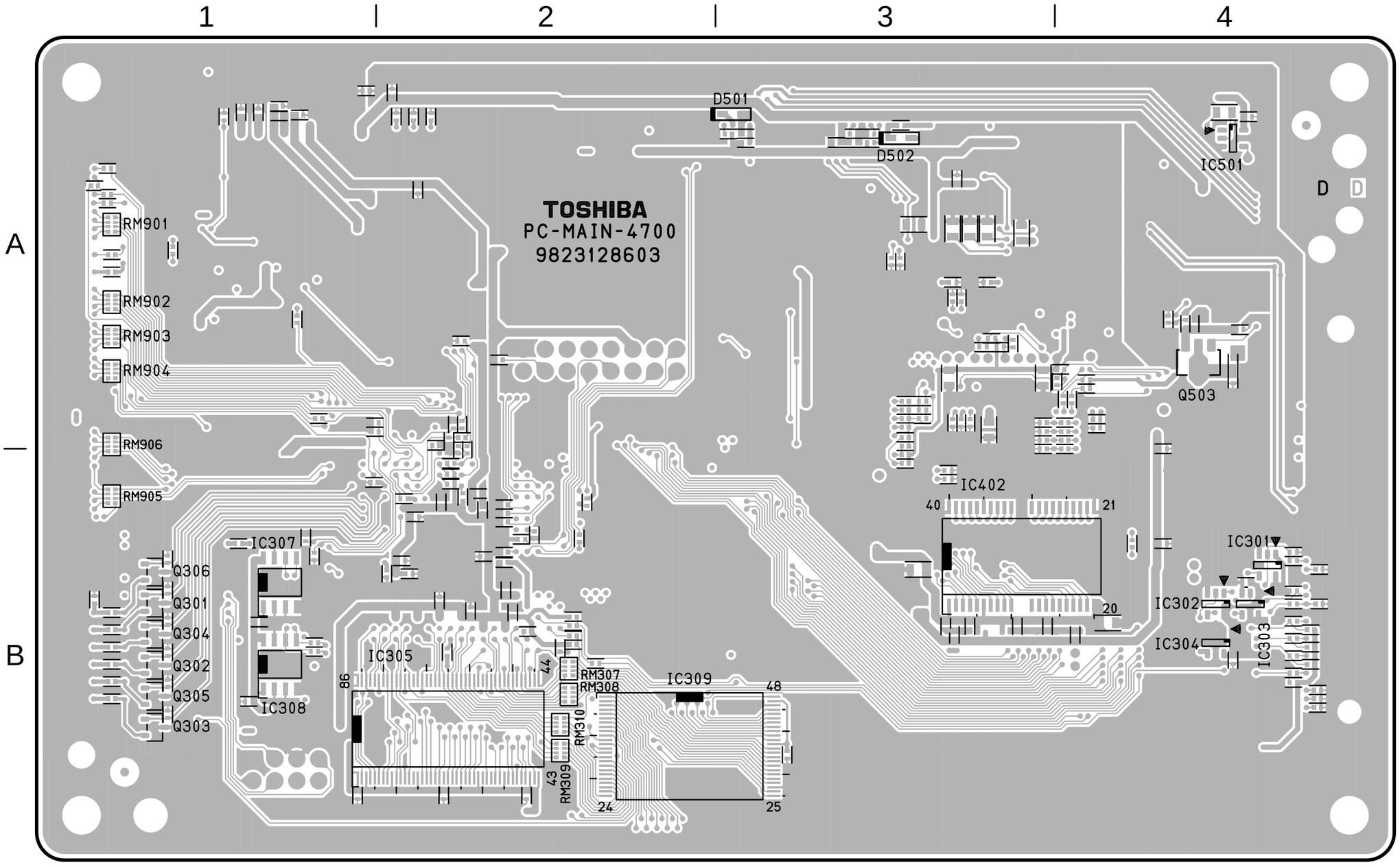


Fig. 3-6-5 EU01 Main PC Board (Bottom pattern, character/symbol)

6-3. Output PC Board

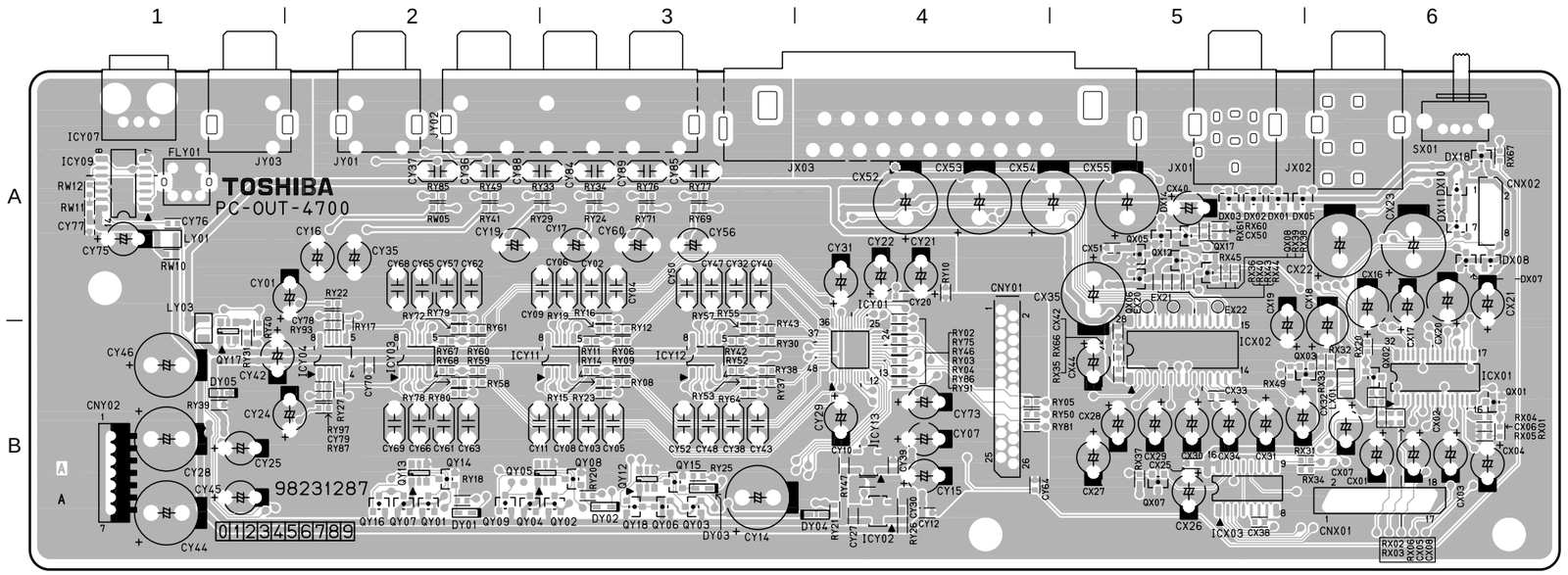


Fig. 3-6-6 EU05 Output PC Board (Top side)

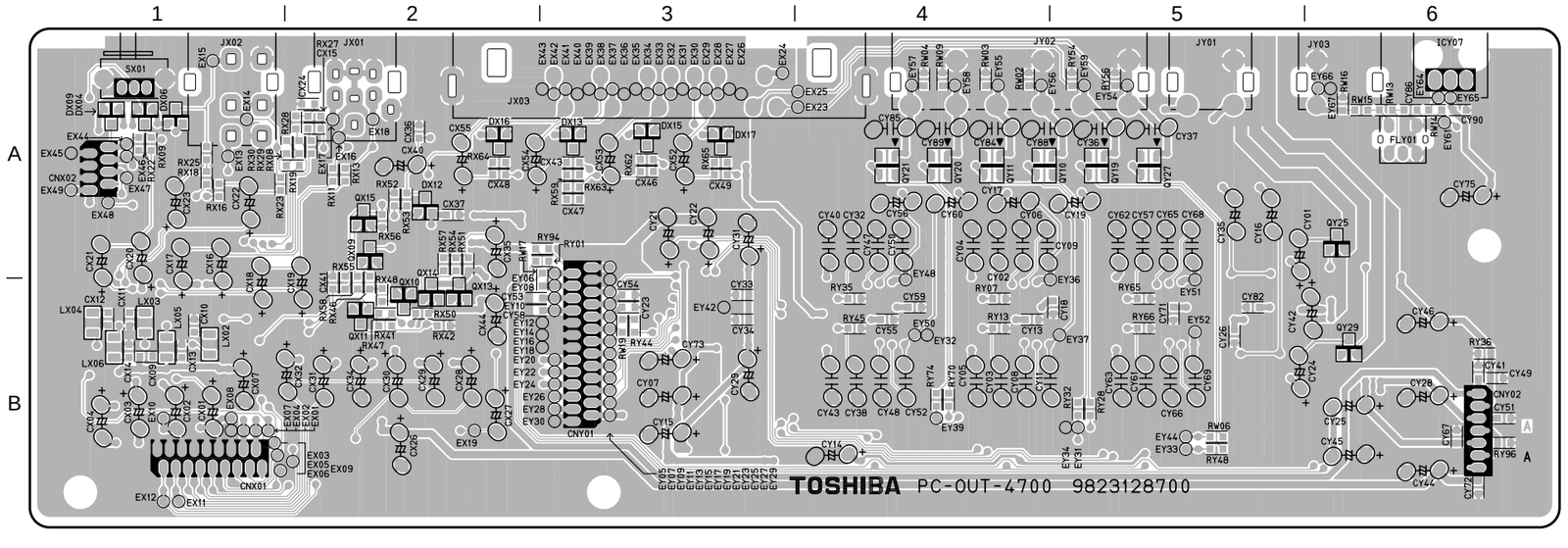


Fig. 3-6-7 EU05 Output PC Board (Bottom side)

Part No.	Location
CNX01	B6
CNX02	A6
CNY01	B4
CNY02	B1
CX01	B6
CX02	B6
CX03	B6
CX04	B6
CX05	B6
CX06	B6
CX07	B6
CX08	B6
CX16	A6
CX17	A6
CX18	B6
CX19	B5
CX20	A6
CX21	A6
CX22	A6
CX23	A6
CX25	B5
CX26	B5
CX27	B5
CX28	B5
CX29	B5
CX30	B5
CX31	B5
CX32	B5
CX33	B5
CX34	B5
CX35	A5
CX38	B5
CX40	A5
CX42	B5
CX44	B5
CX50	A5
CX51	A5
CX52	A4
CX53	A4
CX54	A5
CX55	A5
CY01	A2
CY02	A3
CY03	B3
CY04	A3
CY05	B3
CY06	A3
CY07	B4
CY08	B3
CY09	A3
CY10	B4
CY11	B2
CY12	B4
CY14	B3
CY15	B4
CY16	A2
CY17	A3
CY19	A2
CY20	A4
CY21	A4
CY22	A4
CY24	B2
CY25	B1
CY27	B4
CY28	B1
CY29	B4
CY30	B4
CY31	A4
CY32	A3
CY35	A2
CY36	A2
CY37	A2
CY38	B3
CY39	B4
CY40	A3
CY42	B1
CY43	B3
CY44	B1
CY45	B1
CY46	B1
CY47	A3
CY48	B3
CY50	A3
CY52	B3
CY56	A3
CY57	A2
CY60	A3
CY61	B2
CY62	A2
CY63	B2
CY64	B4
CY65	A2
CY66	B2
CY68	A2
CY69	B2
CY70	B2
CY73	B4
CY75	A1
CY76	A1
CY77	A1
CY78	A2
CY79	B2
CY84	A3
CY85	A3
CY88	A3
CY89	A3
DX01	A5
DX02	A5
DX03	A5
DX05	A5
DX07	A6
DX08	A6
DX10	A6
DX11	A6
DX14	A5
DX18	A6
DY01	B2
DY02	B3
DY03	B3
DY04	B4
DY05	B1
EX20	A5
EX21	A5
EX22	A5
FLY01	A1
ICX01	B6
ICX02	B5
ICX03	B5
ICY01	B4
ICY02	B4
ICY03	B2
ICY04	B2
ICY07	A1
ICY09	A1
ICY11	B3
ICY12	B3
ICY13	B4
JX01	A5
JX02	A6
JX03	A4
JY01	A2
JY02	A3
JY03	A1
LX01	B6
LY01	A1
LY03	B1
QX01	B6
QX02	B6
QX03	B6
QX05	A5
QX06	A5
QX07	B5
QX08	A5
QX12	A5
QX17	A5
QY01	B2
QY02	B3
QY03	B3
QY04	B2
QY05	B3
QY06	B3
QY07	B2
QY08	B3
QY09	B2
QY12	B3
QY13	B2
QY14	B2
QY15	B3
QY16	B2
QY17	B1
QY18	B3
RW05	A2
RW10	A1
RW11	A1
RW12	A1
RX01	B6
RX02	B6
RX03	B6
RX04	B6
RX05	B6
RX06	B6
RX20	B6
RX31	B6
RX32	B6
RX33	B6
RX34	B6
RX35	B5
RX36	A5
RX37	B5
RX38	A5
RX39	A5
RX40	A5
RX43	A5
RX44	A5
RX45	A5
RX49	B5
RX60	A5
RX61	A5
RX66	B5
RX67	A6
RY02	A4
RY03	B4
RY04	B4
RY05	B4
RY06	B3
RY08	B3
RY09	B3
RY10	A4
RY11	B3
RY12	B3
RY14	B3
RY15	B3
RY16	A3
RY17	B2
RY18	B2
RY19	B3
RY20	B3
RY21	B4
RY22	A2
RY23	B3
RY24	A3
RY25	B3
RY26	B4
RY27	B2
RY29	A3
RY30	B3
RY31	B1
RY33	A3
RY34	A3
RY37	B3
RY38	B3
RY39	B1
RY40	B1
RY41	A2
RY42	B3
RY43	B3
RY46	B4
RY47	B4
RY49	A2
RY50	B4
RY51	B3
RY52	B3
RY53	B3
RY55	A3
RY57	B3
RY58	B2
RY59	B2
RY60	B2
RY61	B2
RY64	B3
RY67	B2
RY68	B2
RY69	A3
RY71	A3
RY72	B2
RY75	B4
RY76	A3
RY77	A3
RY78	B2
RY79	A2
RY80	B2
RY81	B4
RY85	A2
RY86	B4
RY87	B2
RY91	B4
RY93	B2
RY97	B2
SX01	A6

Part No.	Location
CX09	B1
CX10	B1
CX11	B1
CX12	B1
CX13	B1
CX14	B1
CX15	A2
CX24	A2
CX36	A2
CX37	A2
CX41	B2
CX43	A3
CX46	A3
CX47	A3
CX48	A2
CX49	A3
CY13	B4
CY18	B5
CY23	B3
CY26	B5
CY33	B3
CY34	B3
CY41	B6
CY49	B6
CY51	B6
CY53	B2
CY54	B3
CY55	B4
CY58	B2
CY59	B4
CY67	B6
CY71	B5
CY72	B6
CY82	B5
CY86	A6
CY90	A6
DX04	A1
DX06	A1
DX09	A1
DX12	A2
DX13	A3
DX15	A3
DX16	A2
DX17	A3
EX01	B1
EX02	B1
EX03	B1
EX04	B1
EX05	B1
EX06	B1
EX07	B1
EX08	B1
EX09	B2
EX10	B1
EX11	B1
EX12	B1
EX13	A1
EX14	A1
EX15	A1
EX16	A2
EX17	A2
EX18	A2
EX19	B2
EX23	A4
EX24	A3
EX25	A4
EX26	A3
EX27	A3
EX28	A3
EX29	A3
EX30	A3
EX31	A3
EX32	A3
EX33	A3
EX34	A3
EX35	A3
EX36	A3
EX37	A3
EX38	A3
EX39	A3
EX40	A3
EX41	A3
EX42	A3
EX43	A3
EX44	A1
EX45	A1
EX46	A1
EX47	A1
EX48	A1
EX49	A1
EY05	A3
EY06	A3
EY07	B3
EY08	B3
EY09	B3
EY10	B3
EY11	B3
EY12	B3
EY13	B3
EY14	B3
EY15	B3
EY16	B3
EY17	B3
EY18	B3
EY19	B3
EY20	B3
EY21	B3
EY22	B3
EY23	B3
EY24	B3
EY25	B3
EY26	B3
EY27	B3
EY28	B3
EY29	B3
EY30	B3
EY31	B5
EY32	B4
EY33	B5
EY34	B5
EY36	B5
EY37	B5
EY39	B4
EY42	B3
EY44	B5
EY48	B4
EY50	B4
EY51	B5
EY52	B5
EY54	A5
EY55	A4
EY56	A4
EY57	A4
EY58	A4
EY59	A5
EY61	A6
EY64	A6
EY65	A6
EY66	A6
EY67	A6
LX02	B1
LX03	B1
LX04	B1
LX05	B1
LX06	B1
QX09	A2
QX10	B2
QX11	B2
QX13	B2
QX14	B2
QX15	A2
QY10	A4
QY11	A4
QY19	A5
QY20	A4
QY21	A4
QY25	A6
QY27	A5
QY29	B6
RW02	A4
RW03	A4
RW04	A4
RW06	B5
RW09	A4
RW13	A6
RW14	A6
RW15	A6
RW16	A6
RW17	B3
RW19	B3
RX07	A2
RX08	A2
RX09	A1
RX10	A2
RX11	A2
RX13	A2
RX16	A1
RX17	A2
RX18	A1
RX19	A2
RX22	A1
RX23	A1
RX25	A1
RX27	A2
RX28	A2
RX29	A2
RX30	A1
RX41	B2
RX42	B2
RX46	B2
RX47	B2
RX48	B2
RX50	B2
RX51	A2
RX52	A2
RX53	A2
RX54	A2
RX55	B2
RX56	A2
RX57	A2
RX58	B2
RX59	A3
RX62	A3
RX63	A3
RX64	A2
RX65	A3
RX66	A3
RX67	A3
RX68	A3
RX69	A3
RX70	B4
RX74	B4
RX76	B4
RY01	A3
RY02	A3
RY05	A3
RY06	A3
RY07	B4
RY13	B4
RY28	B5
RY32	B5
RY35	B4
RY36	B6
RY44	B3
RY45	B4
RY46	B5
RY48	A5
RY52	A5
RY54	A5
RY56	A5
RY65	B5
RY66	B5
RY70	B4
RY74	B4
RY94	A3
RY96	B6

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10MF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ohm J = 470ohm± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly

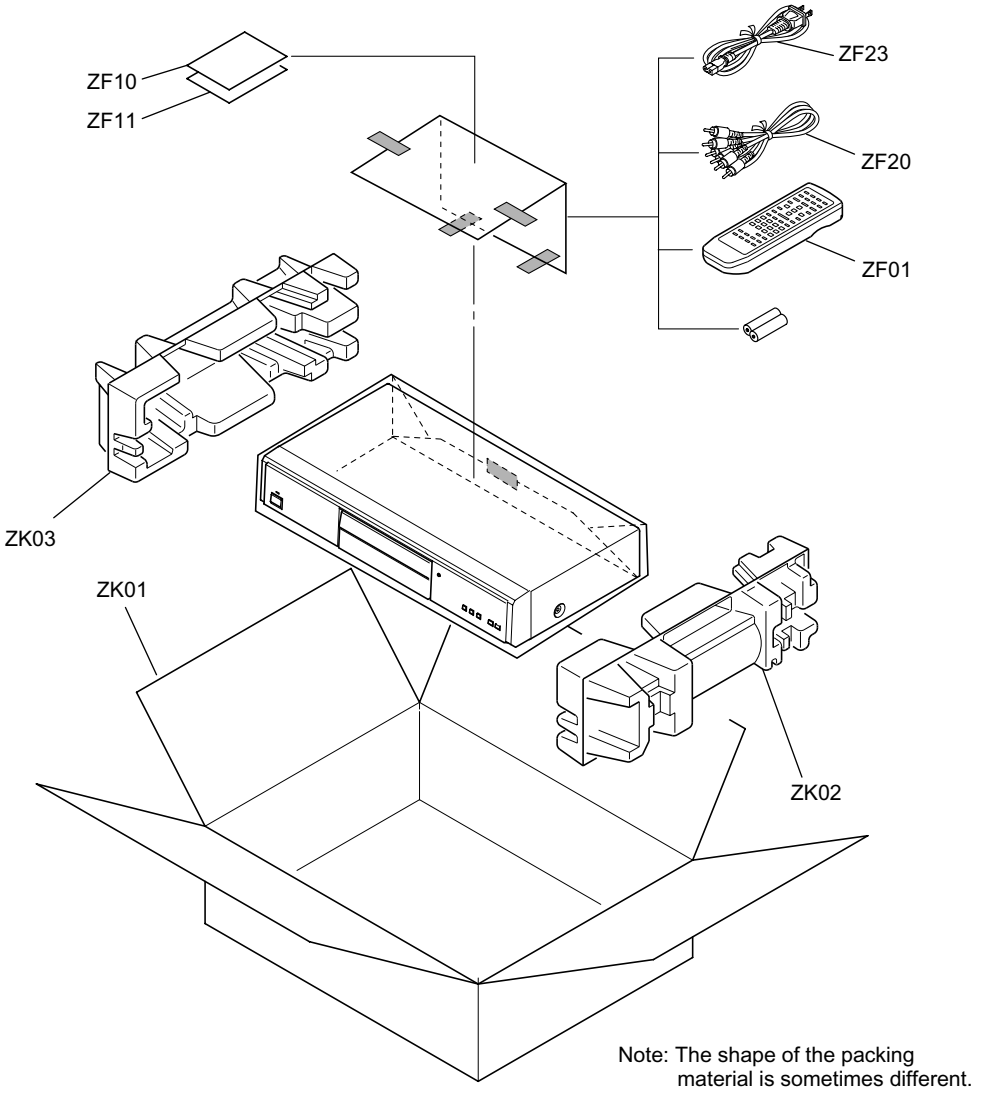


Fig. 4-4-1

4-2. Chassis Assembly

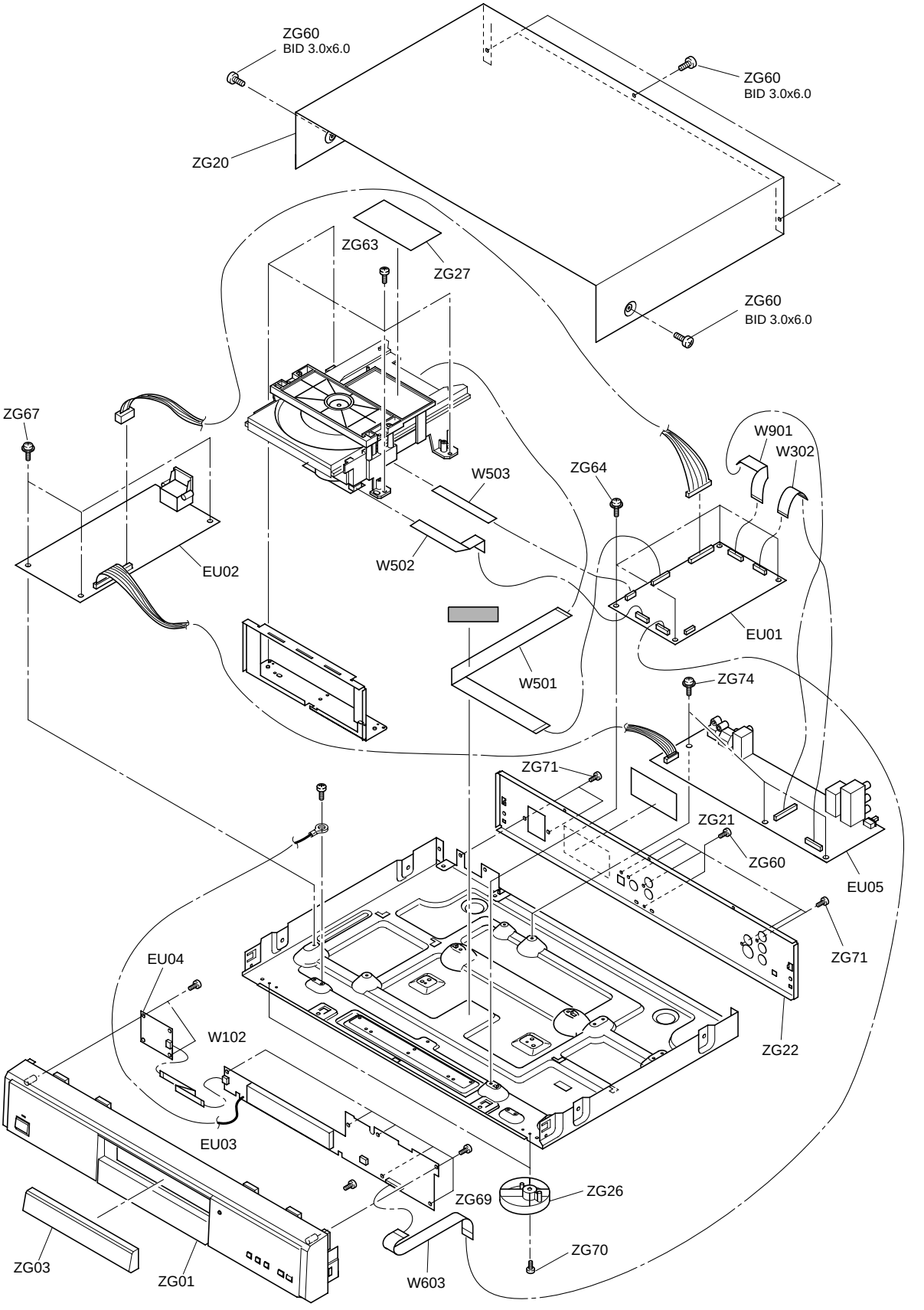


Fig. 4-4-2

4-3. Mechanism Assembly

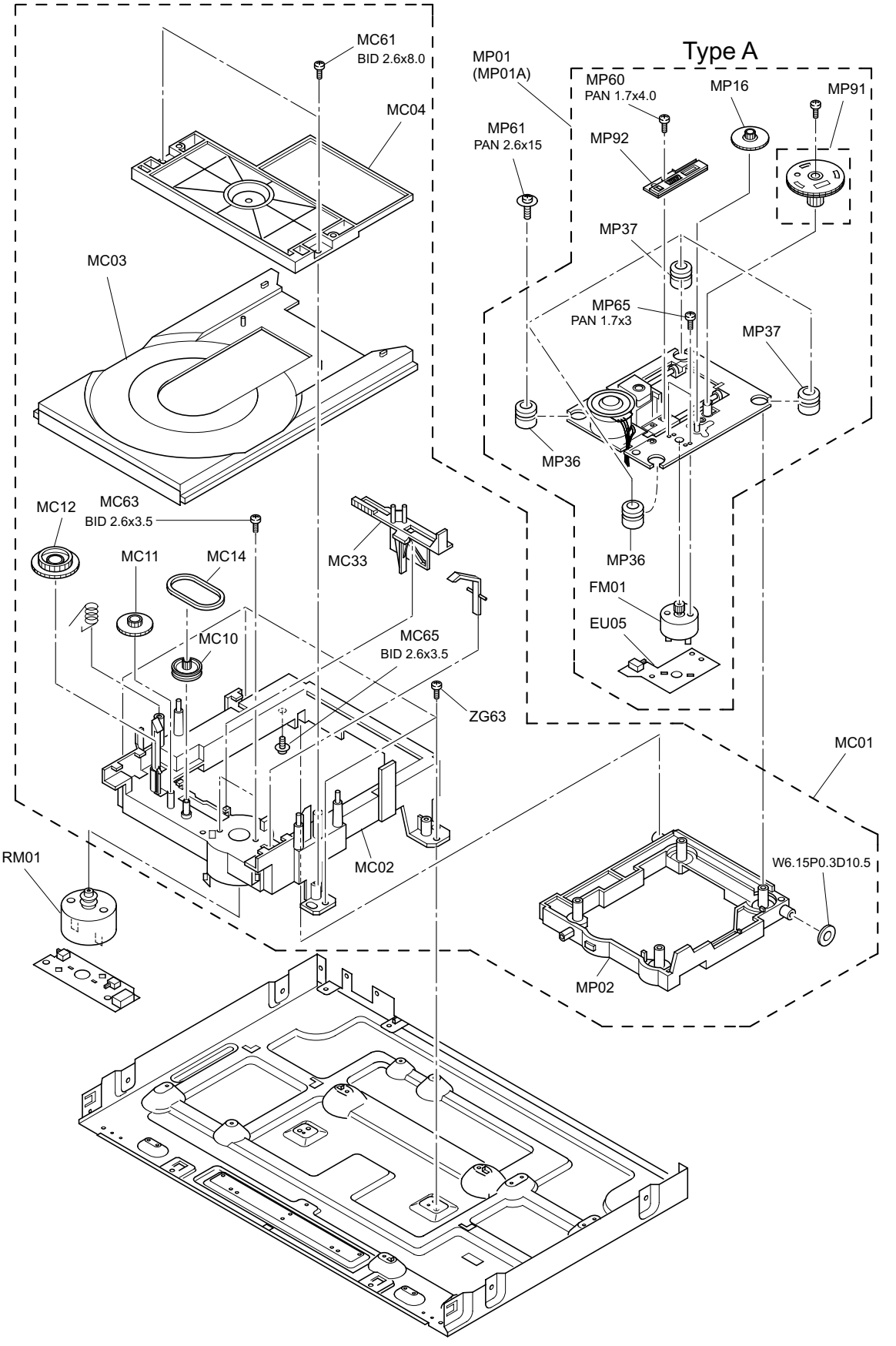


Fig. 4-4-3

Mechanism Assembly (Type B)

Note:

The pickup mechanism assembly has two types, A and B of which shapes differ.

Only Type A is a service part. Type B can be changed to Type A pickup free from any performance problem.

Type A also has two types, but either of the part can be used for service.

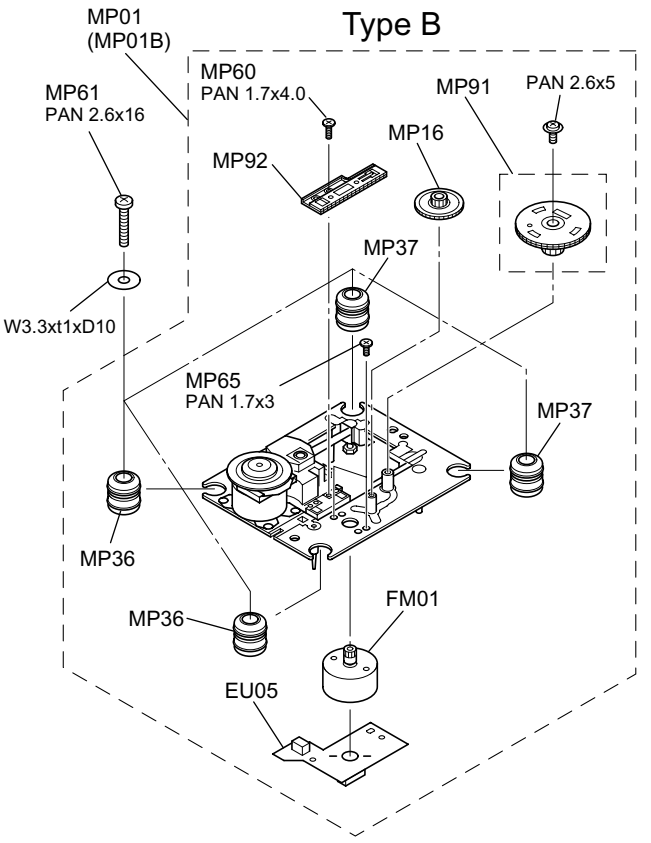


Fig. 4-4-4

5. PARTS LIST

Part Number	Description
I/B DD8020	Instruction Book
79070037	CABLE-AV
79070416	CHASSIS ASSY MECHANISM
79070489	MECHA-PU ASSY
79071205	PANEL-FRONT
79071206	PANEL-TRAY
79073035	COVER-TOP
79078072	REMOTE
79080192	CABLE (6 pin main-chassis mech)
79080193	CABLE (8 pin main-chassis)
79080273	CABLE
79081092	PCB-FRONT
79081093	PCB-SWITCH POWER
79083101	PCB-MAIN
79085082	PCB-POWER SUPPLY
79085084	PCB-OUTPUT
79088007	CORD-POWER